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George Wilson

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MEMOIR

OF

GEORGE WILSON,

M.D. F.R.S.E.

Regius Professor of Technology in the University of Edinburgh, and Director of the Industrial Museum of Scotland.

BY HIS SISTER.

[Jessie Aitken Wilson]

A NEW CONDENSED EDITION.

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1866.

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To my Mother,

THESE MEMORIALS OF THE PAST

ARE

AFFECTIONATELY DEDICATED.

PREFACE.

THE following Memoir has been undertaken at the urgent solicitation of friends. Dreading the temptations to partial—and therefore untruthful—representation, to which relatives are exposed in attempting to portray the character of the objects of their love, I at first resolutely declined to be the Biographer of my brother. It was only when one to whom the public instinctively looked with hope, the Rev. Dr. Cairns, expressed reluctantly, but decisively, his inability to undertake the task, that my scruples were overcome; and the result is now before the reader.

While an honest and earnest attempt has been made throughout after truthful simplicity of narration, all expression of personal opinion has been as far as possible avoided. In fact, the mass of letters at my disposal has made the Life in great part an autobiography.

I have to acknowledge, with much gratitude, assistance received from the scientific friends whose names appear as contributors to the volume, and also the great kindness with which they and others have placed letters and private papers freely at my service.

To my brother, Dr. Daniel Wilson, I am indebted for hearty co-operation and assistance. The proof-sheets have been submitted to him, and to others fully competent to judge of the representation given, and now go forth with their sanction and approval.

May He who has given strength to complete a record written under the shadow of heavy grief, be pleased to add His abundant blessing, and to illustrate afresh one of the laws of His kingdom: "That which thou sowest is not quickened except it die."

J. A. W.

Elm Cottage, Edinburgh,
December, 1860.

PREFACE TO ABRIDGED EDITION.

In the present edition the larger volume has been compressed into much smaller bulk; and while it is believed that nothing essential to the interest of the book has been omitted, it is hoped that to the general public its acceptability has been increased.

January, 1866.

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MEMOIR OF GEORGE WILSON.

CHAPTER I.

HOME AND FAMILY INFLUENCES.

"They grew in beauty side by side;
They filled one home with glee."

In the year 1812, on the 2d of June, a new household was formed in the city of Edinburgh. The small group of friends assembled at the wedding little thought that any beyond themselves would look back on that day with interest. So it ever is: we take part in what seems an every-day occurrence, and find afterwards, that, like the prophets of old, we have been by word and act heralding wondrous things, sowing seed that shall never cease to grow and propagate itself; uttering words whose echoes shall resound throughout the eternal ages.

The bride, Janet Aitken, the youngest of a large family, was a native of Greenock, where her father lived and carried on business as land-surveyor. So fragile was Janet as a child,

that it was not expected she could reach maturity, and her mother tried to prepare her for early death. But the race is not to the swift, nor the battle to the strong; and the tender mother was the first to go, leaving her desolate little girl to the chill of an unsympathizing world, and disposed to envy every one who had a mother. At the time of her marriage Janet had passed through years of grief and change, and only a sister and a brother remained of her family circle. Both were married, and *home* had long been to her a word of little meaning.

The bridegroom, Archibald Wilson, had, a few years before, come from Argyleshire to settle in business in Edinburgh, and thus, to each, "our own romantic town" had few personal associations. Yet at this, their wedding-time, how fresh and beautiful it looked! How pleasant in the clear mornings and long evenings to watch the Firth and the distant hills peeping in and out in the varying lights; to feast the eye on the crags and on the battlements of the dear old castle in its nest of green, and on a thousand pictures of living beauty which refresh the eye at every turn! Might not the fine old city seem to say to each of the two young hearts, '"Forget also thine own people, and thy father's house," and in me thou shalt have a home dearer than those of the past?'

The first pledge of this unspoken promise was given in the birth of a daughter in the spring of the following year. When Mary was a year old, there came a fair little brother again to open the fountains of love; and, when John was nearly two years of age, the group received a fresh addition in the arrival of a second boy, who was named Daniel, and is the only son who has survived till now.[1]

[1] Dr. Daniel Wilson, Professor of History and English Literature, University College, Toronto, Canada.

The year 1817 opened in sorrow, for it found the heavy hand of sickness on one of this little band; and ere its first month closed, Johnny had left them for the eternal home. The first deposit of the family treasures was thus placed beyond reach of the spoiler, and since then, from time to time, the store has been added to. Like the dreamer's ladder, a pathway was formed, by which the yearning hearts left behind have paid many a visit to the happy circle above, and been refreshed by the assurance from the Saviour's lips, "I will come again and receive you unto myself."

About a year after this, on the 21st of February, 1818, twin boys were born. It seemed to the mother, that God, having seen the desolation of her heart in the dreary months gone by, had sent, in His compassionate love, not only a son to increase the little flock, but also one to take the place of his brother in heaven. So while a new name, George, was given to the elder of the two, the subject of this memoir, the other received the name of John.

When the twins were two years old, a little brother joined them, but only to spend two days on earth. Within the next five years two sisters and a brother were born. Of these, Jeanie died when four years old, Margaret lived three months, and Peter, the second of the name, one year. Afterwards the family received its complement in the birth of two sisters, who still survive. The elder one received her mother's name, Janet or Jessie, and the younger that of the dearly loved Jeanie, who had "fallen asleep" some years before.

How far George was influenced by the death, in rapid succession, of so many of those who were growing up side by side with him, it is quite impossible to tell; but undoubtedly many impressions were received which were not effaced during the years that followed. At five, when his

baby sister slept her last sleep, he learned perhaps the first lesson of death and immortality; and, as he had attained the age of seven when the sister of four years, and the brother of one, were taken away within two months of each other, he was capable of realizing somewhat at least of that which is learned only in such times of darkness. "I saw," he wrote in the last year of his life, "in early childhood or boyhood, so many little brothers and sisters die, that the darkness of those scenes, and the anguish of father and mother, made an indelible impression upon me." It was his belief that the human mind loses no impression ever made on it, and that the events of infancy, though they cannot be recalled, are not effaced, and will probably, like wonders revealed in a palimpsest, come up for review in the future life.[1] It may be that the distress he ever felt, on hearing of or witnessing suffering in young children, originated in those early experiences.

But though so soon reaping the benefits of a yoke borne in youth, let it not be supposed that his was a gloomy childhood. Far otherwise; his keen susceptibilities were open to joy as fully as to sorrow. His healthy, active frame, accustomed to boyish sports, made life itself a pleasure; warm affections bound him closely to each one

[1] He thus writes in one of his letters:—"I have always thought, and even declared in my lectures, that the most wonderful of all books would be the Autobiography of a Baby; but since I fear that you will not be able to coax either Freddy or Malcolm to make your fortune by writing it, I go on to suggest that in the life that is to come, our memory of the past will go back over all our earthly reminiscences, not merely over all that *we* grown folks recall, but over all that we have forgotten, which is at present most vivid to your dear bairns. We shall mount to the origin of our individual lives, and trace to their dim beginnings our first conceptions of space and time, of our own individuality, and of other existences; of an inner consciousness and an outer universe."

in the home circle; his mother's face was in his eyes the most sweet and beautiful the earth contained; and the peculiar love of twins for each other was felt by him in all its force. To this last has been attributed "something of that wonderful power of attaching himself, and being personally loved, which was one of his strongest, as it was one of his most winning powers."[1]

His mother is "regarded by all who knew her as a woman of rare natural gifts, who zealously fostered in her children the love of knowledge which they inherited."[2] "Any one who has had the privilege to know him, and to enjoy his bright and rich and beautiful mind, will not need to go far to learn where it was that her son George got all of that genius and worth and delightfulness which is transmissible. She verifies what is so often and so truly said of the mothers of remarkable men. She was his first and best *alma mater*, and in many senses his last, for her influence over him continued through life."[3]

It was a custom of his mother's to pay a visit each night to the little cot of her twin boys, and to repeat over them Jacob's blessing, "The God which fed me all my life long, unto this day, the Angel that redeemed me from all evil, bless the lads!" So fascinating was this to George, that, as he long afterwards described to a friend, he used to lie

[1] "Horæ Subsecivæ," Second Series. Article, "Dr. George Wilson."

[2] Sir David Brewster, in the "North British Review" for February, 1856. Article, "Colour Blindness."

[3] "Hora Subsecivæ," p. 104. Subsequent to the appearance of the first edition of this Memoir, Mrs. Wilson has joined the company of her children, who had preceded her to the world of spirits. She lived to a good old age, surviving her son George nearly five years. This was matter of surprise to herself, and often led to the remark, "I did not think I could have lived so long without him."

awake watching for it, pretending to be asleep that he might enjoy it to the full. In the family, this blessing seemed in consequence set apart, as it were, to the twins, and was inseparably associated with them.

From their earliest years the education of the children was most carefully attended to. Realizing that more is meant by education than the few acquirements merely which so often pass for it, and that in it is included the development of every faculty of mind and body, the parents encouraged their children in all pursuits likely to further this. Their individual tastes and powers were carefully watched and elicited, and a kindly confidence was encouraged which bore rich fruit in after years. They lived, moreover, in a moral and religious atmosphere of the healthiest kind; and the influence exerted on them by this was most powerful.

About the age of four, each one was sent to an elementary school, and the boys afterwards attended classes taught by Mr. Knight, a teacher well known for his care in laying the solid substratum so often neglected in schools of greater pretension. Subsequently, when George was nine years of age, he was sent to the High School of Edinburgh.

Many things are to be noted of those early years of his life. An instance of his good feeling may be alluded to, in which is seen the germ of the unselfish consideration for others so manifest throughout life. While at Mr. Knight's he was enjoined to return home immediately after school hours. As this injunction was unheeded day after day, an explanation of his conduct was at last insisted on. With great reluctance he told that a little boy, blind of one eye, was much persecuted by his schoolfellows on account of his infirmity, and not permitted to join in any of their games. Sympathy with him overmastered the fear of parental displeasure, and George had remained each day

to play with him, thus hoping to dispel the painful impressions made by the tyranny of the other boys.

A striking feature of later life was manifested even in those days, namely, the power he had of gaining friends and acquiring information. A fellow traveller to Glasgow, on one occasion, when he was about eleven years old, gives the following account of him on the journey by canal: — "George placed himself side by side with the greatest person on board (the captain) and plied him with question after question till the moment he left the boat. Before leaving, he very politely went up to the captain and mate, and thanked them heartily for their attention and information. They both said, they had never seen such a boy. Besides the captain, he met on board a Miss Peacock, a most intelligent lady who had been in Ireland, England, &c. George did question her, and got quite in love with her, saying, 'she could speak about everything, just like his mother.' Before parting he gave her a cordial kiss."

It may also be observed that very early many of the sympathies by which George was afterwards distinguished began to exhibit themselves. His love for books, and that eager desire to know, which continued to increase throughout life, were very marked. Great fondness was shown for all the departments of natural history most calculated to interest boys. In connexion with this, allusion may be made to his first attempt at rhyme. A friend had taught him and his brothers to impale live insects as specimens. This greatly grieved their mother, and she spoke earnestly to them of the sacredness of life, how easy it is to take it away, but how far beyond the power of any created being to restore it. George showed the fruit of this lesson, by coming joyously one day to tell of a butterfly he had saved from drowning

in a pool of water. One life saved seemed in the child's estimation to atone in part for those taken away. On going to bed, his mother found a scrap of paper under her pillow containing in verse the butterfly's thanks to its preserver! "The tender heart which was afterwards to plead so earnestly with medical students against the cruelty of reckless vivisection was here revealed!"[1]

More pleasantly was humanity cultivated by the encouragement of pets of all kinds. Hedgehogs reposed in undiscoverable corners in the daytime, and appeared at twilight to be fed. Tortoises made the recesses of the old-fashioned grates their bed-chambers, coming out to be regaled with grapes and dandelion leaves. In short, it was an understood fact, that no pet could come amiss to the household, so strongly did a love for animals pervade the family. One favourite, at the time we now speak of, was a large rough bull-terrier of no great beauty. Duff had been intended to act as watch-dog, but he soon came to the conclusion that watching his master's children was the duty nearest his heart, if not his conscience, and he was skilful in evading all other demands on his talents. Jessie, when able to walk alone, liked nothing better than to go to sleep with her little arms round his soft fat neck. One day an alarm was raised that baby was missing. In vain every room was

1 "Macmillan's Magazine," January, 1860.

In a letter, dated Feb. 22, 1855, the following sentence occurs:—"I had the happiness, when a boy, to have a mother who sedulously encouraged her children to be naturalists, and made me when at school the passionate lover of God's works, which in maturer years I have learned still more to be."

And to Mrs. Day, St. Andrews, he says, in 1850:—"Much of my delight as a child arose out of natural history. It gives food to the imagination, and tempers the fairy books, of which too many cannot be given to children."

searched, till by chance some one looked underneath a table, where she lay sleeping in the favourite fashion, Duff waiting in motionless patience till it should please his little mistress to release him.

By the death of a maternal aunt, four cousins were about this time left orphans. Their father, the Rev. John Russell, Muthil, had died not long before. Their ages varied from four to twelve; and henceforward they and the Wilsons formed one family.

George's brother Daniel recalls many excursions, on Saturdays and other holidays, to places of interest in the neighbourhood of Edinburgh. Both George and his brothers were good pedestrians, and many a happy day they spent in visiting picturesque ruins, bringing home botanical or geological specimens, as tangible tokens of the day's pursuits.

A "Juvenile Society for the Advancement of Knowledge" was helpful to such tastes. It met weekly at the Wilsons' house, and numbered amongst its little band school companions whose names have since become more or less known to the world.

In autumn, 1832, he quitted the High School with a fair share of prizes. Languages never proved his favourite study; he did not devote himself to them with the hearty zeal which marked him in his earliest scientific acquirements. Nevertheless, while occasionally at the head of a class of one hundred and fifty boys, he never passed below the first five, thus maintaining a creditable position amongst his schoolmates.

It is needless to dwell longer on this busy, happy boyhood. Various juvenile efforts in prose and verse remain to attest the diligence of his habits and the range of his sympathies. But enough has been said to testify to the

abounding life and energy of both body and mind. The little rill, bright and sparkling, which we have seen emerge threadlike from its source, and gleefully pursue its way through sunshine and shade, has now widened its banks, and we begin to realize that one day it may bear on its bosom the hopes and fears of many, ere it pass into the boundless ocean, and be lost to view in its expanse.

CHAPTER II.

YOUTH AND STUDENT LIFE.

"Shades of the prison-house begin to close
Upon the growing boy,
But he beholds the light, and whence it flows,
He sees it in his joy;
The youth, who daily farther from the east
Must travel, still is nature's priest,
And by the vision splendid
Is on his way attended;
At length the man perceives it die away,
And fade into the light of common day."

HAVING quitted school, the time had arrived for final decision as to George's profession. With the approbation of his parents, he selected that of a physician. It is doubtful whether even then he contemplated engaging in practice, but the curriculum of study it insured had great attractions for him.

About this time a friend recommended to his parents, as the best training for a boy, an apprenticeship in the Laboratory of the Royal Infirmary. This well-meant but injudicious counsel was followed, and in a few weeks more George was bound for four years as apprentice. His friend Dr. M'Culloch, House Surgeon to the Hospital, died almost

immediately after, and the drudgery of each day, so far from being lessened by pleasant companionship, brought him in contact with evil and profanity altogether new and hateful to him. Looking back on this period of his life, he says, in his opening address as President of the Society of Arts in 1857, "How a youth is taught is as momentous a matter for him and for the world as what he is taught. It has been most justly declared by a grateful man that the daily society of a good and noble woman is in itself an education : such also, in its degree, is the society of a good and noble man ; and the fellowship of the base and foolish is the heaviest curse which can fall upon the young. All our skill is acquired by imitation and practice, so that instinctive mimicry and unconscious habit make us in manners and acts what we are. It is no small matter, then, side by side with whom the boy-apprentice works. Ah me! When I recall some of the enforced companions of my apprentice days, I feel that I would make the greatest sacrifices rather than permit a youth dear to me to encounter similar temptations."

His first impressions of the new scenes presented daily to his view are graphically described in an Address he gave to students in 1855. The portion we extract may justly be reckoned autobiographical.

"When the young student first visits the hospital, his faith in God as the wise and merciful designer of man's body, must, in sympathizing natures, undergo a painful shock.

"He goes round the wards, we will suppose, with an intelligent senior, who describes to him the more important cases. There is one patient propped up with pillows, and panting for breath; he has not lain down for weeks, and the dread of suffocation which looks out from his strangely anxious and imploring eye compels him to snatch what

repose he can in his uneasy posture. He has, as the senior explains, 'disease of the heart;' certain of its valves are not fulfilling the purpose they were designed to fulfil, and hence his sufferings, which death only will terminate.

"Here is a second, trembling lest you touch his bed-clothes, and quivering from time to time with scarcely endurable agony. He has disease of the knee-joint, and, the senior whispers, will have his leg taken off to-morrow. And so that articulation on which the professor of Anatomy expatiated in special lectures, as abounding in the most skilful arrangements for combining strength, flexibility, and rapidity of easy motion, has suffered such destruction, that it is not only useless, but so injurious, by neutralizing or deranging all the otherwise healthful, life-sustaining arrangements of the body, that it must be removed, however harsh and perilous the process be.

"Here is a third, haggard and wan, beseeching the doctor for more laudanum, as he has no rest night or day. He has cancer of the stomach, and will linger long before death release him from his sufferings.

"Here is a fourth, a virtuous and once a beautiful woman, but *lupus* has eaten away half her face, and the disease is still spreading.

"We will look at but one case more. It is a relief to the student to turn to it, for the patient has a bright eye, and says with a smile, though his breath catches a little, 'that he is better, and feels he needs only the air of his native hills, to which he is presently going, to make him all well again.' He is far gone in Consumption, and has not many days to live. . . .

"The facts I have mentioned are unquestionably startling and sad. They drive some altogether from medicine as a profession; they tempt such as prosecute its practice

to abandon it. Fortunately for those who continue in its ranks, the first painful impression which the spectacle of great suffering occasions, becomes, like other first impressions, deadened by repetition. Other impressions, also, come in to lessen their effect. The selfish and unreasonable complaints which sufferers too often make produce a diversion in favour of the spectator's feelings. Among the daily incidents of even the saddest sick ward, amusing events occur to lighten the tragic darkness which otherwise prevails. The convalescents are ready to cheer and assist the distressed. The medical attendant has the unspeakable comfort of knowing, that however mysterious may be the origin of the anguish around him, he can generally do something to lessen it, and often can entirely remove it. And the patient is not seldom ready to declare, that the moral gain to him from his sufferings has been such, that he counts them a small price to have paid for such a reward.

"The first surgical operation which I saw performed in the Edinburgh Infirmary, soon after becoming an apprentice there, was the amputation of a sailor's leg above the knee. The spectacle, for which I was quite unprepared, sufficiently horrified a boy fresh from school, especially as the patient underwent the operation without the assistance of anæsthetics, which were not introduced into surgical practice till many years later. Some days after the operation, when the horror of the first shock had passed away, I resolved to visit the poor fellow, who happened to be a namesake, and see if I could render him any little service. I went, however, with no little hesitation, expecting to find him in the same state of suffering and prostration as I had seen him in before, and fearing that I should only distress myself, without doing him any good. I was agreeably surprised, however, and indeed amused, to find the invalid half

propped up in bed, and intently occupied with a blacking-brush, borrowed from the nurse, polishing the single shoe which in six weeks, or a month at soonest, he might hope to wear. I could not help smiling in his face, and wishing him a speedy return to his shoe, which at once became the text of a cheerful conversation. The ludicrous inappropriateness, as it then seemed to me, of the patient's occupation relieved my feelings; and its perfect appropriateness, as it seemed to himself, relieved his; for, as I learned more fully in subsequent conversations, his great concern was to count the hours till he should reach a fishing village in the South of England, where his mother and sister longed for his return. He made an excellent recovery, and reached his home in safety. After this experience I became a constant visitor on my own account to all the wards, and in the course of four years made many a strange acquaintance. I refer here to the circumstance, that it may become the ground of recommendation to the young student, who is distressed by the spectacle of suffering, to interest himself in the welfare of the sufferers. A feeling which may otherwise readily grow morbid is turned into a wholesome and profitable moral exercise. The text sculptured on the front of the Edinburgh Infirmary, 'I was sick, and ye visited me,' has a blessing in it for the visitors as well as the visited, as our Saviour emphatically teaches, and as all who have obeyed its implicit command have realized."[1]

This Wilson, the sailor, became the object of many kind attentions from his young namesake. For some time sailor-friends visited him, bringing tobacco wherewith to while away the weary hours. When they left for another port,

[1] "On the Character of God, as inferred from the Study of Human Anatomy." Addresses to Medical Students, by request of the Medical Missionary Society in 1855-56, pp. 43-49. A. and C. Black, Edinburgh.

George so fully sympathized with the sailor without tobacco, coffee, or friends, that money given to purchase a much coveted copy of Coleridge's "Aids to Reflection," was cheerfully sacrificed to supply lacking comforts. Nor were books, newspapers, or delicacies forgotten in the frequent visits, till the time of release drew nigh. Then it transpired that so far from possessing the means to reach home, his very clothes were detained for arrears of lodging. This difficulty was speedily surmounted by a subscription raised by George, and with the aid of the Strangers' Friend Society, and private help, thirty shillings and a free passage to London were obtained. To crown all, as it happened that the vessel did not sail till the day beyond that of his exit from the hospital, he was brought home triumphantly as a guest for the night, and next day left with the good wishes of the household. In token of gratitude came a letter from the sailor's sister, in Christ Church, Isle of Wight, addressing the boy in jacket as "Honoured Sir," much to his amusement. A beautiful letter it was. The wanderer had been followed everywhere by the prayers of his mother and sister, and now he was restored to them in peace and safety. George's kindness to this sailor may be taken as a specimen of the liberality that constantly emptied his own purse, and lightened those of his friends. An outer coat with large pockets caused much amusement to all who knew the varied nature of its contents from day to day, while it made them wonder little that the nurses, with whom he was a favourite, declared "they never saw sic a laddie."

The shock received by George in his first experience of the operating theatre was sufficient to make him shrink from a speedy repetition of such scenes. In a joint family epistle of October 20th, 1832, Daniel says:—"Two other

operations have been performed at the Infirmary, but George did not see either."

Shortly after entering on his duties in the Infirmary, George began the student-life which his long hours of work made so burdensome, for not till nine each evening was he free to study, and we can imagine how weary and jaded the labours of the day often left the boy. During the Winter Session of 1832-33, he attended classes for Mathematics and Natural Philosophy; and in the following summer, attendance on Mr. Lizars' Anatomical Demonstrations introduced him more specially to medical study.

Notwithstanding these new objects of pursuit, former projects were not abandoned. "The Juvenile Society," says his brother Daniel, "had fulfilled its functions, and was being superseded by others suited to the change of tastes and requirements of advancing years. By the minute-book of the Edinburgh Zetalethic Society, which has remained in my possession by right of my fulfilment of the duties of Secretary during the two years that it lasted, I find George engaged with our cousin John, and a few other associates, on the 4th of April, 1833, in organizing this Society for the reading of essays and discussion. It differed in no very special degree from the ordinary run of students' debating clubs. The subjects of discussion were sufficiently miscellaneous; but their main use was in exercising the reasoning faculties, and developing such facility of speaking in public, as was sufficiently manifest in George's later public career, whatever other societies may have contributed to it."

Afterwards, during his college days, he became a member of several other societies connected with the University. One of them was the Diagnostic Society, although there is no evidence that he took a very active part in its proceedings.

In November, 1833, he entered Professor Hope's class for chemistry, and two anatomical classes, Professor Monro's within the University, and Mr. Lizars' without its walls. This was a busy winter, but doubtless a happy one. The interest previously felt in anatomy was deepened, while chemistry began to unfold her wonders to him. According to the laws that regulate the restless nature of boys, he had not failed to prosecute juvenile researches in chemistry and physical science while at the High School. One experiment is borne in mind where the object aimed at was to produce an earthquake. For this purpose a paste was made of steel-filings, sulphur, and other forgotten ingredients, and this was buried in a box of earth. The earthquake, however, was disobliging, and slept quietly in its box, much to the disappointment of the embryo philosophers. Having, to his intense delight, attended a course of lectures on chemistry in the School of Arts, he was in some measure prepared to enter on the systematic study of this science. In his "Life of Edward Forbes," after depicting the great change wrought by the passing of the Anatomy Bill in 1832, giving greatly increased facilities to the study of that science, he speaks of chemistry and its professors at that time, and gives a graphic account of the advancement of chemistry and the sister sciences during a quarter of a century.[1] The period of which it treats, from 1830 to 1855, has a peculiar personal interest, as well for the subject of this Memoir as for Edward Forbes, bridging over, as it does, the time from their entrance into the University as students, to that of their return as teachers within its walls.

In 1834, when George was sixteen years of age, the British Association for the Advancement of Science held its

[1] See "Life of Edward Forbes," chap. iv.

first meeting in Edinburgh, and was an object of great interest to him, giving shape and consistency to many vague longings after scientific occupation and successes in what so soon became the favourite pursuits of his life. He frequently alluded in after life to the influence this meeting had on him.

The Session of the succeeding winter, 1834-35, besides continued study of anatomy under Mr. Lizars, brought Surgery and Materia Medica into the field. Two years previously, Dr. Christison, the present accomplished Professor of Materia Medica, had been transferred from the Chair of Medical Jurisprudence to that which he still holds. "In his hands the subject soon became one of the most attractive to the students. A museum, still in many respects unrivalled, was, by indefatigable exertions, furnished step by step with illustrative specimens. Many of these were botanical, a few mineral, gathered from all quarters of the globe. A large number were chemical, and were chiefly prepared in the laboratory attached to the lecture-room, where, assisted by some of the more zealous lovers of chemistry among the students, the Professor spent many hours each day in chemical research." [1] Of this laboratory we shall hear again. Mr. Turner, the Professsor of Surgery, "was a most uninteresting lecturer; a timid, shy man, who could not look his class in the face, and seemed fitted by nature for anything rather than the duties and responsibilities of an operating surgeon." [2]

The winter Session of 1835-36 found him attending the lectures of Professors Alison, Home, and Syme, on the Institutes of Medicine, the Practice of Medicine, and Clinical Surgery, with those of Mr. Lizars on Anatomy.

[1] "Life of Edward Forbes," chap. iv.

[2] *Ibid*, chap. v.

Attendance on the hospital wards was also continued as before.

In May he was introduced to the pleasures of Botany under Professor Graham. The "prelections were delivered in a pleasant lecture-room in the Gardens, where the foliage of the luxuriant trees, which peeped in at its windows, served as window-blinds, and singing-birds took the place of the College bell."[1] Along with Botany the pursuit of Chemistry was carried on under Professor Christison.

On June 2d, he writes to Miss Mackay, Glasgow (afterwards his sister-in-law)—"I am now with Christison, labouring away under his superintendence at all sorts of chemical operations, analysis, synthesis, &c. &c. I have got a corner to myself, and the whole laboratory, with all its contents, at my disposal, and depend on it I'll make good use of them. I have had many a project, which the limited and fragile nature of my chemical apparatus, consisting of a few tubes and vials, prevented me ever putting to the test of experiment; but now I shall stick at nothing, and be sure I'll always be busy with something of my own." At this stage in his studies, namely, when he had been three years a student of medicine, his apprenticeship in the Infirmary ended. In this way the time needful for study became more attainable, and although some of the classes and duties had little interest for him, the year which remained in order to the completion of his curriculum was busily occupied.

The classes of this closing session were—Professors Jameson on Natural History; Alison on Clinical Medicine; Hamilton on Midwifery; and Mr. Kenneth Kemp's Practical Chemistry; besides attendance in the Hospital Wards. In summer he resumed the study of Botany.

[1] Life of Edward Forbes. Chap. iv.

During the years of study thus briefly recorded, a diary was written by George, from which it may be well to make a few extracts. The quotations are given, not for their intrinsic merit, but chiefly as showing the metaphysical bent of his mind at this age. Like the glass windows of a beehive, the journal, permitting us to watch his thoughts, reveals the workings which helped to produce results so beautiful in his after life.

"*December* 23, 1835.—I have sat down this evening to commence what I have long thought of doing, the record of some of the curious thoughts and wild imaginings that pass through my mind during the course of the day. It is not to be a diary either of events or feelings; that is to say, I have not the intention of chronicling every circumstance that happens to me; but I intend putting down in this book such of my thoughts as appear to myself worthy of preservation, either on account of their singularity or beauty. And the end I hope to gain by so doing is twofold: I hope to create for myself a store of images and thoughts, &c. which have been the product of my own meditations, and which will form (independently of their possessing no other claim to attention but the circumstance of having once been my own thoughts) a summary and conclusion of all courses of reasoning which have busied me; and in this light will occasionally be of service, by affording the necessary conclusions, without the labour of going through the preliminary steps. But the main object of my commencing is the wish to treasure up the prominent features of my mind as it acts at present, both to watch its progress, and to afford a fund of pleasing delight afterwards, in musing over the thoughts of my young days; and it may appear strange to thee, reader, whoever thou art, that I should put any preface to a collection of *my own* meditations! But

though destined to be a book read by none but myself at most times, yet there are some who love me, and take a kind interest in me, to whom this shall not be denied, and there is one to whom it will be freely given! But besides all this, it is possible and by no means improbable that no one will see it during my own life, but to whom it will be of great interest when I am dead; and though I might wait to see who shall be my survivors, and address them particularly, yet the possibility of my death being a violent and sudden one, preventing the arrangement of such things as this, has induced me to preface this book, that those into whose possession it may designedly or accidentally come, may perfectly understand the cause of its being written.

"Several evenings ago I had a curious dream, different from any preceding one, both as to kind and degree. I awoke in the middle of the night surrounded by deep darkness and utter stillness. I had the most distinct sensation of having been dreaming, although the precise nature of the dream I could not recollect. I felt a strange indescribable sensation of great happiness, evidently a continuation of the feelings which had possessed me immediately before awaking, and there was no evident cause to excite such lively feelings of delight. I had the sensation of being alone in some great hall or boundless valley, in a state of the utmost loneliness and stillness imaginable, yet pervaded with a feeling of intense happiness, and that happiness calm and deep, in no way partaking of the character of idle mirth or careless levity, but accompanied with a feeling of the deepest solemnity and reverential awe felt for some invisible being of great power, to whom I had some *obscure* idea I was indebted for the feelings of pleasure; but my thoughts were so intent on reflecting on the curious conditions of happiness that I turned my attention very slightly to the cause of their

occurrence. I awoke, but this feeling of deep happiness did not immediately disappear, not indeed till it had been much the subject of reflection and analysis.

"I have no remembrance of having such a dream before. My dreams are for the most part, in health, ludicrous, in disease, frightful; but in no way resembling the dream in question. It may be plausibly accounted for. On the preceding evening I had been reading, with feelings of great admiration, the 'Confessions of an Opium-Eater,' and in addition enjoying the conversation of a highly intellectual and imaginative friend, and retired to bed under feelings of great excitement, more especially my imagination called into play; and it may be supposed that such a state of mind easily produced the effects in question, *i.e.* the dream. This would go to prove the truth of Dr. Macnish's theory regarding dreams, that we dream all the night long, and that the reason we do not recollect them is because memory is not called into action. If that theory be correct, and I think it is, what glorious visions I must have lost! what entrancing pictures of seraphic beauty and unimaginable glory!"

On the next page is a morsel of Infirmary life, in writing which he seems to have been interrupted, for it closes abruptly in the middle of a sentence. Two pages have been left blank for its continuation, but the story was never resumed.

"*January 5th*, 1836.—I have this day had to perform one of the most melancholy duties which it has fallen to my lot for some time to perform, the burying of a stranger in a foreign land, in the cold grave. 'Tis about two months since I was struck, in going round one of the wards of the Infirmary, by the handsome contour of one of the patients,

and the exceedingly beautiful forehead towering over a Grecian nose and well-formed features. I learned he was a German, a *valet de place*, who had been travelling from Aberdeen to Edinburgh, but in getting off the coach had had the misfortune to twist his leg at the hip. The pain and inconvenience was slight at first, so as not to prevent him travelling on; but on reaching Edinburgh he began to suffer more and more, and at last the pain and inability to move the limb which he experienced increased so as to prevent walking, and he came into the Hospital. For some days the injury appeared a trivial one; he was cheerful, in good health generally speaking"——

At the death of this man, no friends were found to claim his body; and the thought that his "beautiful forehead" should be touched by the dissecting-knife, George felt to be unbearable. He could not, however, undertake to be responsible for the necessary expenses, so many demands did the patients make on his slender stock of pocket-money. The result of anxious pondering how his object might be accomplished was, that he searched out some Germans, waiters in one of the clubs in town, and telling them of their countryman's death, he assured them that, if they claimed the body, his stock of clothes would amply refund all outlay. Their acquiescence was readily gained to this plan, and he and they were the mourners at the funeral.

This unprofessional cheating of the dissecting-room of lawful subjects was not a solitary case. Where his love or interest was excited in patients, their bodies had a sacredness in his eyes, and at almost any sacrifice he would save them from what he deemed desecration. It may be supposed how much more strongly such feelings influenced him in reference to relations and friends, for whom his affection was so strong, and almost passionate in degree,

as to surprise those who casually became aware of its nature.

He was, in the days we now speak of, an impetuous, ardent, and often impatient youth, capable of any act of unselfish devotion to those dear to him, but abounding in strong and sometimes unreasonable aversions. Yet with a certain waywardness, there was mingled such a winning grace that it was a notorious fact that when he chose, consciously or unconsciously, to exert the power, no one could refuse him aught he asked. Indeed, throughout life his powers of "coaxing" were often called into requisition in cases where others had failed. From this digression, we return to the private journal, as the best source of information in regard to the inner life. The entries are more full in the first month of its existence than at any future period, though some of them are too sacred and personal to be made public.

"*January* 11*th.*—Logicians have given much attention to the study of the emotions likely to be legitimately excited by certain occurrences, and on this point Dr. Abercrombie has most particularly dwelt, and yet I cannot perceive the possibility of ever ascertaining or fixing what emotions should originate from known causes; for in every individual these emotions must differ as well in kind as in degree, and there appears to me no subject better fitted than this to show, to prove, how much mind differs in different individuals, and how essentially it is the reflection of the mind on objects and events which is the greatest cause of joy and sadness, and delight and horror, and not those occurrences themselves, so much so that we often find that the contemplation of such objects awakes startling, striking, and vivid feelings, which these objects themselves did not excite, though

apparently calculated to do so. There is a curious case illustrative of this in the life of the celebrated physiologist, John Hunter. This gentleman had among a collection of animals two leopards, which by some accident escaped one day. Hunter was aroused from his studies by their noise in endeavouring to get away; and on running down, found them attempting to scale the walls of the court-yard. He courageously sprang forwards, grasped each by the neck, dragged them back to their den, and secured them; but on retiring again to his study, he was so struck with the risk he had run, and the extreme hazard of the attempt, that the thought almost maddened him. The longer he thought, the more forcibly was he struck with the thought of what danger he had been exposed to. To adduce another case, in one of the autumnal months a summer or two ago, walking along one of the tributary streams of the Tweed, I was struck with the appearance of an old castle near the river. This castle (the Drochil) being in excellent preservation, I walked up to it, and after viewing its external excellences, began to examine the internal accommodation of the donjon-keeps. Looking into one, I saw it had a hard, firm floor, and jumped down through the window to examine it. Unfortunately I had made a very great mistake as to the consistence, and instead of landing on solid ground, I descended to my knee in a mass of mud and green weeds and water. Immediately on feeling myself sinking, I made a convulsive spring at the window, and grasping the stone lintel with supernatural energy, raised myself with the utmost ease from this quagmire, although unassisted by the desperation of the moment, I believe I could not have made my way as I did. My first feeling on reaching solid ground was amazement, succeeded by involuntary laughter at the absurd mistake of thinking a ditch

of water *terra firma*. With the utmost alacrity I immediately proceeded to remove the mud from my nether limbs, and an adjournment to the neighbouring river soon removed all the adventitious stuff I had acquired in my luckless leap. I laughed a good deal on thinking of it, and soon banished it from my mind, nor the whole of that day did I think of it. But at night while lying alone on my bed in utter darkness, when the circumstance came back on me, it awakened thoughts of a fearful description; for the keep might have been fourteen feet deep, as well as three or four, and I might have sunk and died a most horrible death, and my mysterious disappearance must have been a source of great sorrow to my friends; and when I thought of all these things, I was so horrified that I eagerly courted sleep to banish thoughts of so terrible a description; and even yet, after the lapse of many a month, my heart throbs with unusual emotions, and the thoughts excited are still painful and horrible.

"The two preceding cases are curious in showing how false the common idea is, that when causes of joy or grief are over, the effects will cease; but in all minds of any power, both will be immeasurably increased by reflection deepening their hues and heightening their effects, and producing deep and ineffaceable impressions on the heart of the thinker.

* * * *

"*January 12th.*—What a great and wondrous change comes over the mind emerging from boyhood to youth, at sixteen or seventeen. What a change spreads itself over every thought and feeling, and how does it deepen and render more intense every emotion. When I was a boy at school, my thoughts were brilliant, my wishes ardent, and my cares few; and, lo! now what an alteration: that

which was liked is now beloved, and that which was disliked is now abhorred. The pleasure of school-boy life was in a great measure the result of a consciousness of animal life; the feeling of being a living creature, as Moore has beautifully expressed it in 'Lalla Rookh,' is sufficient to give happiness; but when sixteen or seventeen has arrived, along with the striking and rapid development of the body, the mind also increases in all its capabilities. With what different feelings do I now look on objects calculated to excite strong emotions. What rapturous feelings of delight are excited in my heart by the contemplation of the 'Beautiful,' whether it be the beautiful in physical or mental conformation, or in composition, elocution, poetry, or means to an end. Whatever can claim title to the term beautiful in my estimation, awakens in my heart feelings of uncontrollable emotion. How delightedly do I gaze on works of art or design, such as Martin's or Turner's or the sculpture of the renowned masters, the Medicean Venus, or the Graces of Canova. How rapturously and passionately do I dwell on beautiful poetry, or the wild imaginative works of rare genius; and how pleasing it is to contemplate God's provision in this world! So great an ecstasy of happiness have I felt from the above-mentioned causes, that it seemed that death could be the only termination of feelings which were utterly opposed to the daily occurrences of the world. But in sad subjects as much are my feelings deepened in intensity: the cries of distress, the moanings of anguish, break on my heart far more acutely, and sink into my heart far deeper, than they ever did heretofore; and the prospect of evil and misery, and sin and woe, affects me much more powerfully than it did of old. In short, now my mind is much more developed than two years ago, and can ascend and descend much more widely than it

could at that time, and my joy or sorrow is much more the result of legitimate causes than it was then."

"*January 14th.*—What a horrible thing remorse is! how fearful in its influence over the soul; clouding all the gay prospects that have been opened to its view; throwing a black and gloomy shroud over the fair and beautiful, and tinging every emotion of the same ghastly hue, whether the mind may have been turned to really proper or merely frivolous pursuits; and how balefully and abhorredly gleams back on my own mind the recollection of the multitude of accursed sins I daily commit;—my exceeding and ungrateful unkindness; my wayward temper, and my excessive irritability so much increased lately, that even the slightest noises are sufficient to enrage me. Would that I could, with Divine assistance, overcome, banish them, and turn the mental activity to more useful purposes."

In the year 1836, the household was once again darkened by the shadow of sickness unto death. John, the gentle, loving twin-brother of George, had never been robust, and pulmonary symptoms had caused anxiety for some years past. Those now became so marked as to leave little ground for hope, and some months of lingering illness brought him to his heavenly home, when his eighteenth year had scarcely begun. The contrast to his brother in personal appearance became more striking as his life approached its close. He had attained nearly six feet in height, and when, with his lustrous black eyes and raven hair, he was seen beside George's slender little figure and fair complexion, none could have guessed the close tie that united them.

No record of George's sorrow at this mournful separation exists: it was a grief too deep for much expression. A friend remembers a walk they had together in this time of sadness, and George with great earnestness telling him

there was no text in the Bible he thought so beautiful as this, "God shall wipe away all tears from their eyes." As a child this had been a favourite, and was to have been the text of his first sermon had he ever mounted the pulpit, but now new beauty was seen in it. To one or two intimate friends he frequently spoke tenderly of John; and the only wish he was known to express regarding his burial was in conversation with a friend: "I should like to be laid beside my twin-brother." This desire has been fulfilled; side by side they lie as in the happy dreams of childhood, safer now and happier than then; for them that sleep in Jesus will God bring with Him, and they shall be satisfied when they awake in His likeness.

The two following letters were written during a holiday season. His host in Rothesay, and companion to Arran, Mr. Campbell, had been a fellow-student, whose acquaintance had been made at the defunct Zetalethic Society.

"Rothesay, *Saturday, September*, 1836.

"My dearly beloved Brother,—As the weather up to the Thursday of the week has been delightful, I have seen the country under its most beautiful aspect, and the rain and clouds which now overspread the sky give rise to scenes which could never have been presented to the eye in sunlight. Before I say anything of my own views or actions, allow me to tell you one thing which I gathered from my companion on the coach to Glasgow. He had resided for a winter in Banffshire, and often saw the Aurora Borealis, in beauty far excelling its appearance in our more southerly locality. One appearance which occasionally presented itself was that of a great sheet of light waving backwards and forwards in the sky. You know to what delightful ideas such a description gives rise. In pleasing meditation

I laid myself back, in imagination beholding this great curtain of green and silver light waved to and fro in the heavens by the hands of archangels, the drop-scene as it were of heaven, which, rolled back as a scroll, would show the cherubim and seraphim hymning to their lyres; and often last winter when walking out late in the evening, when the aurora was flickering in the sky, I have watched with delight a dark mass of cloud seemingly rent asunder to show a scene of dazzling unearthly brilliancy, from which I have hoped with a fond credulity to see an angel's face look down; but why need I have recounted the ideas given rise to by the stories of other men and other days? have I not with mine own eyes seen enough to delight and amuse without at all referring to extrinsic things?"

"Irvine, *Tuesday, September*, 1836.

"My dear Mother,—Time hath brought the changes of place which I anticipated, and you will see from the date of this epistle I have arrived at Irvine. The three last days of the week before this were so miserably bad that they were utterly useless in the country—the whole land and sea overspread with mist; not a point of land, not a lighthouse to be seen; nothing but the sea lashed by the angry wind, and the gale not sufficiently strong to give sublimity to the scene. I sat within doors, talking, laughing, joking with Mr. Campbell and his sister, and a fortunate discovery of the 'Essay on Taste,' by the Rev. Mr. Alison, father of the professor, was hailed with great delight, and served to amuse me for a long time.

"On Saturday evening, at six o'clock, Mr. Campbell and I set off in the steamboat for Arran. It rained, till within a very short time of our embarking, very furiously, and under most dispiriting weather we set off. The evening

was cold and occasionally wet, till we rounded the headland of Bute. The gale then freshened considerably; the wind blowing on the side of the vessel made it reel and toss very wildly, and the spray was swept over us by the rude gust. I could not go below; I should at once have become sick; so I sat it out on deck. There was something very wild in the night, quite dark, the vessel pitching very much, and the billows breaking in foam upon her; still there was a peculiar beauty in the sky, which could never have been seen in the effulgence of sunlight. Long, long after the sun had set, he sent up a dim flood of light on the edge of a cloud which overshadowed the west, and the appearance of the one still subdued line of light mirrored in the wave was peculiarly beautiful and wholly new to me; and the time passed rapidly on in watching the moon labouring in the sky, in fitful gleams, now shining out, and now behind a dense cloud which she fringed with her light. We arrived at Brodick, the most easterly of the two villages of Arran, at nine, and immediately disembarked. We were landed on the beach, and set out for the village at a little distance; but soon we were brought to a stand by a great stream which ran right across our path. The army of some great conqueror could not be more astonished at a river like the Amazon or Orinoco, than we were at this impassable barrier. I was just about to walk straight through it, when a stout handsome Highlander came wading through, and carried us across, one by one, upon his broad shoulders. When Mr. Campbell and I had been ferried over, we stood laughing at the strange perplexed look of those whose turn had not yet arrived. I was strongly reminded of the description given by the classical poets of the grim disappointed look of the ghosts who could not afford to pay Charon the small coin he charged for ferrying them over the Styx. Rain

and hunger soon drove us away from our benevolent spectacle, and we were speedily esconced in a far more comfortable room than I had ever dared to anticipate in so out-of-the-way an island. We had tea, looked about us, tumbled into a very comfortable bed, and were soon asleep.

"The sabbath, though at first wet, turned out a most beautiful day, and we set off for Lamlash Church, a distance of six miles; the walk was very delightful, for a long way through that most beautiful heath country where the heather and bracken are the only plants growing, and for a while we walked by the sea-shore. A splendid rainbow, the most vivid and beautiful I ever saw, spanned the sky, its apex passing over the peak of Goat Fell. I have seldom seen a more beautiful sight; and after crossing a hill, the bay at the western end of the island burst into our view. I have never seen so fine a bay, so admirably scooped out as it were, and a large island which occupies the mouth of the bay protects it from the violence of the winds. . . . .
We entered church; one of the detestable country kirks, white-washed walls, unpainted decaying wooden seats, and earthen floors; the sermon was much better than I expected, and I got one new idea from it. We put a half-penny each into fine tasselled black velvet bags, which supply the place of ladles, and came away.

"I had reserved all my energies for the Gaelic sermon in the afternoon, although I could not get the stupid people to understand how I, who could not understand Gaelic in conversation, could comprehend it preached. I did not think it worth while to enlighten them. As, in consequence of the lateness of the day when the Gaelic sermon commenced, had we stayed we should have had a very disagreeable walk back in the evening, I did not go, and so missed all the edification which should have ensued from the Highland

discourse. I had, however, a very edifying conversation in the evening with one of the Arran women concerning adders, to see one of which alive was a most eager wish of mine. The principal facts concerning their natural history were that they could draw birds out of the air; that if they tasted bread they grew to an enormous size; and she assured me that when the people were eating bread out of doors, they were very careful to allow none of the crumbs to fall, for fear the adders should eat them, and be converted into boa constrictors. If one of the said adders bites any person, it immediately runs to the nearest water, and the person bitten must immediately run also; if he gets first, the wound will not be dangerous, but if the adder reaches the water before him, he must make up his mind for a great deal of suffering. A silken bandage tied round the bitten limb cures it, but cotton or linen is useless. I questioned this in the woman's presence, telling her I had no doubt a ligature tightly tied would be very useful in preventing the poison passing into the blood, but that it would be exceedingly foolish to allow a sufferer to wait till silk had been got when a common garter would suffice. She got very angry, and my crime was consummated when I asked her what they were fed upon; she asked me if I read the Bible, and told me I would find it there. I in vain tried to recollect any passage telling the food of adders, till one of the bystanders suggested the curse put on the serpent, that he should 'lick the dust.' On attempting to question that way of reading the passage, so great grew her ire that I was fain to decamp from the anathemas which were unsparingly hurled at me. . . .

"In two days I shall be in Greenock, and in two days more you shall see your affectionate son,

"GEORGE."

In the autumn of this year the family circle lost two of its members by his cousin John Russell's marriage, and subsequent departure for Australia, and his brother Daniel's settlement in London. The loss of the brother who had been his daily companion for so long a time, was keenly felt by George. He thus writes of it to a friend : "I have just parted with my brother, who having gone away to London to push his fortune as well as he can, has left us melancholy and distressed, and me especially, who never loved any one so fondly as my brother, and will with difficulty find any one to supply his place or cheer my solitude." Their intercourse had been very close and tender, and henceforward George, with his usual self-forgetfulness, tried to contribute to the happiness of the absent one, in making letters do their best to compensate for the pleasures of confidential converse. To this we owe an abundant store of letters, not such as the penny-postage has introduced, but long, well-filled sheets of foolscap, written within and without.

Before this parting occurred, the examination for the College of Surgeons' Degree was passed. Here is its announcement to Daniel, who was then from home on a visit :—

"*6th September*, 1837.

"MINE GOOD BROTHER AND FRIEND,—Give me hold of your right hand ; there, shake it right stoutly, and congratulate me on having passed Surgeons' Hall. Ah ! ha ! ha ! it is but two hours since the memorable metamorphosis took place, and here I am ready not merely to perform all kinds of bloody operations, which is small matter, seeing diplomaless folks can haggle wonderfully well, but ready, prepared, and resolved to take *fees*, and be independent of the subsidies of any one. I took good care none of the good folks at home should know aught about it. I com-

pletely blinded them, and the more so, that in a walk last night with Catherine and Mary, I took care to talk as much nonsense as possible, imagining that such a careless, thoughtless-like piece of policy would completely mislead them as to my intentions. To atone for it, however, I had to sit up till one, spelling over all the mysteries of bones, muscles, nerves, &c.; and all next (that is, this) day, I have been busy reading over half a book of chemistry, and the whole anatomy of the leg and arm, from the shoulder and haunch to the fingers and toes; and well it was I did so, seeing I was examined on the arm, and I was all the more expert at answers from having looked over it. At the eventful hour of half-past one, having slipped out in my best coat and waistcoat, and taken your cane, that I might delude any of my friends with the idea I was about to wander out on a walk, carelessly looking into the jewellers' or toy shops when any one passed even on the other side, who I thought might recognise by my dress my intentions, all the while swinging your wonderful stick with as much composure as possible, though I believe it kept pretty good time with my heart thumping on my ribs, so much indeed, that 'thinks I to myself,' I'm in love—with what, I leave you to guess, being one of those courteous writers who don't insult their readers by explaining everything, as if they were addressing children.

"I was ushered into the waiting-room, a little plain room, which contained two fellows sitting in the window, and putting on a very big magnanimous look, I strolled down to a seat, on which planting myself, I kept stedfastly looking at them, that they might not look at me, a plan which succeeds as well with men as lions (see African Travels). At last, however, tiring of staring, I fumbled in my pocket to see if I had any sort of book to while away

the time. I dragged out of the recesses of my pocket Mr. Williamson's French Prayer-book, and for want of better, fell to reading Epistles, Collects, Prayers, and Psalms, all very much to my edification no doubt. At last, saturated with theology, the clock having struck two, I returned the book to its cell, and pulling off my gloves, laid them, hat and cane, aside. I now learned that one of the gentlemen at the window had passed the day before, and that one (comforting thought) had been rejected; and I was awaked out of a chirurgical reverie by the other fellow singing out, 'Have you any tremors?' 'No,' said I, and thrust my head up against the wall, and planted my feet firmly on the floor, that the said tremors might not appear. They were two good-natured fellows, and were busy telling me to answer as quickly as possible, lest they should hear too distinctly. Hem! thought I, and the bell rang, and in I was ushered to the grandees, whole four inquisitors. There they fell to; shoved me Gregory, made me translate, twice write a prescription, tell them as much about drugs and chemistry as would fill a pharmacopœia, and so much about the anatomy of the arm, skull, neck, &c. the surgery of the same part, and the philosophy of broken skulls, and the method of coopering such casks, that I might rival Syme, Liston, or Lizars. 'You may depart, sir,' said the President. I was kept for a moment in a small side-room, and then pulled in to be told, 'that my examination was highly creditable to me, and that they were very much pleased.'—Rejoiced in heart, here I am, your affectionate brother, GEORGE."

At the close of his last session there was another brief time of relaxation, much required and greatly enjoyed by George. He had only ten days at his command, as new duties, of

which we shall hear anon, were now awaiting him; but he seems to have made the most of his time. After visiting friends in Stirling, some days were spent at Loch Katrine, Loch Lomond, and elsewhere. As bearing on this very happy excursion, we give the following letter to his mother.

Sept. 26*th.*

"I sit down in a great hurry to write you a few lines before leaving Glasgow, although I trust the arrival of Mrs. Thompson has abundantly informed you of the manner in which I spent my time in Callander, so that I shall say nothing, as I might merely recount to you things already sufficiently well known. I started from Callander at five o'clock on Monday morning, and, with the crescent moon for my only light, journeyed along, singing and musing and meditating. In an hour the first slant rays of the sun began to peep above the horizon, and I had the pleasure of seeing his illustrious majesty the sun rise in all his glory,—no small pleasure to me, who cannot recollect to have ever seen him before in similar circumstances. I arrived, after a most delightful walk, at the head of Loch Katrine, nothing doubting that I should find a boat ready to receive me, and waft me along the lake, but although boats and oars lay about in abundance, there was no appearance of rowers. Imagining that the boat had already gone, although I was quite in time, I walked along the banks of the lake, hoping to make up to them if passed, and to be taken up if they came after. As it afterwards appeared, they sailed after me, and I saw them slowly sailing up the loch, but though I halloed and shouted, and waved my handkerchief, they either could not or would not hear me, and I had to tramp on along the sides, which, as they form every here and there wide bays, make the land journey much longer than the way by water. I pushed on, however, at a rapid

pace, keeping almost up to them, till I came to the last two miles, where I lost my way and wandered in a wood. Skirting the waters, having no notion at the time that I was wrong, I pushed on, though I saw no road, and after a very perplexing, weary journey, now clambering over rocks, now climbing over walls, now creeping through rough hedges and palings, often uncertain which was the right path, but, contriving to fall in with the footpath, without very much difficulty, I at last threaded my way, wearied out and exhausted, to the ferryman's house,—for the road runs along the east side of the loch, and you must cross to gain Lochlomond. Here I earnestly craved a draught of buttermilk, but the woman had none. She at once, however, sent out her pretty little girl to get water at my request, but meanwhile milked her cows, and brought me a bowl half full of milk and warm water, which I most greedily drank, and was thereby greatly refreshed; in truth, it was no doubt the best thing I could have taken; and when, in answer to some inquisitive questions of her fine manly husband, I said I was a surgeon, she so simply said, 'And to think that I should be giving you advice!' I assured her I knew them as being very *skilly* folks, and that I was half a Highlander myself, and I at once craved her husband to sing me a Gaelic song. While crossing, he told me he 'couldna sing,' unless he 'had a glass o' whiskey;' but as I had every reason to believe there was none in the loch, my only accessible place for liquors, I had no means of making him musical; and so, with stories about Rob Roy, and jokes, and the like, we sat and talked while he rowed me across. I had still five miles to walk, which was no cheering prospect to me, who had already walked twenty-three; and in spite of my invigorating drink of warm milk, I crept very laggingly on. The road was a dull, sterile,

rugged thing, only, every now and then, I saw the party which had passed up the loch, moving with ponies. I should have been very glad to have made up to them, and should certainly have treated myself to a pony's back had I reached them. At last, jaded and exhausted, I arrived at the small clachan of Inversnaid. After resting, I took off my collar and washed my face and hands in the cooling waters of Lochlomond, along whose surface I very speedily was moving in a comfortable little steamer. I was much too weary to enjoy it as I should have done, had I been refreshed; but it is truly a magnificent (that's the word) loch, especially at the west end, where I was greatly delighted with the fairy-like appearance of the scattered islands. We make a work about our Arthur Seat and Calton Hill, and our Duddingston and Lochend,—the market here is quite glutted with them. You might tumble Ben-Ledi or Ben-Lomond and fill up half a dozen lochs, and the only effect would be to bring into view twice as many more of hills, lochs, straths, gulleys, peaks, and I know not what. I am just going off to Dunoon; and with the kindest love to all, I am, your affectionate son,

"GEORGE."

CHAPTER III.

A YEAR OF PREPARATORY WORK.

"The pleasure and delight of knowledge and learning, it far surpasseth all other in nature."—BACON'S "Advancement of Learning."

AT the point which our narrative has now reached, George Wilson was nearly twenty years of age. As we have seen, he had completed the course of study necessary for entrance upon the profession he had chosen, although not old enough to obtain the degree of M.D. He had also come fairly under many of the influences which were most powerful in the development of his intellectual and moral life; and we already see in him more than the germs of much that made him the universal favourite he was in later years. A healthier, happier spirit than he was in those days assuredly could not be. As being thoroughly appropriate to himself at that time, we once more quote words which he long afterwards wrote of another. "The dew of his youth was still upon him. The corrupting breath of the world had not tainted his freshness, or its cold touch chilled him. His eager eyes looked forth on a rich and boundless future. Young men of genius and tastes like his own had become his attached friends. Seniors of the highest repute welcomed him as a pupil. Libraries and museums of the greatest value were open to him daily. His shortest walks were

through the streets of a city which delighted his artist-eye, and had a strange fascination for him."[1]

Immediately on his return from the trip spoken of at the close of the preceding chapter, George entered upon the duties of assistant in Dr. Christison's laboratory. This was a position entirely after his own mind, for it necessitated pursuits dearer to him than any other; and doubtless it greatly tended to the fostering of those tastes by which he was mainly distinguished in his after life. It was all the more pleasant for him that he loved and respected the distinguished professor under whom he laboured; a love and respect which nowise diminished as the years advanced. The following letter is characteristic. It was addressed to the lady who afterwards became the wife of his much-loved brother Daniel.

"*October 6th*, 1837.

"My dear Miss Mackay,—Having finished the perusal of some tomes treating of certain recondite philosophical and literary subjects, I gladly sit down to dispel all your anxious fears regarding my safe arrival from your most hospitable city. Some foolish people would at once have called for pen and paper, and before their boots were fairly pulled off, have indited a scanty unreadable scroll, purporting to tell that the steamboat had not blown up, nor its engine gone wrong, nor itself come in collision with another, nor the writer fallen overboard, &c. Then reverting to travels by land, the scrawl would go on to say, that the horses did not run off, nor the coach tumble over a cliff, nor the traces break, nor the wheels suffer any mishap, and so on. But I am far too much of a philosopher to write any such nonsense, nor am I about to bore you to

[1] "Life of Edward Forbes," chap. iv.

death with a melancholy recital of my being almost frozen to an icicle, and nevertheless nearly tumbling off the coach with sleep. I have fortunately forgotten these trivial and temporary inconveniences, and the reminiscence of them would be of no possible use to either of us, so I meddle not with it any more. After the sobering influence had duly improved me, I set off on Monday morning to the College, and the first person I beheld was my most respected instructor, Dr. Christison. After shaking hands with the worthy professor, and making inquiries after his health, I whipped off my surtout, and on with my old coat,—I say my old coat, but it stands in the same relation to my back, that Elijah's mantle did to Elisha, being the legacy of a departed (to the Continent) friend,—and I fell to a very curious case of attempted poisoning, by putting vitriol in tea, in the analysis of which I occupied the whole of the first day. Since then I have been engaged up to the period when I write, with two delicate processes for the purification of sulphuric acid, one for the more accurate preparation of tinctures of Barks, not to mention the analysis of laudanum, and assistance in opening a box from Ceylon, containing roots, fruits, leaves, &c. from that most interesting place, sent by a lady for Dr. Christison's Museum.

"Situated as I am just now, buried in the difficulties of several of the physical sciences, changing from pharmacy to chemistry, from chemistry to physiology, or taking a refreshment in the subtilties of logic, or the elegancies of rhetoric,—you must not expect my epistle to be very rich in what may either amuse or instruct, the more so, that I have lost my brother, who sharpened every faculty as 'iron sharpeneth iron.' I have no one now to laugh and joke with; or, if a feeling of lonesomeness comes over me, and I cast my eyes round for a familiar countenance, they fall

on a grim, grinning battered skull, surmounted by two cross-bones, the adornments of my mantel-piece. Nevertheless, I am not to be outdone in grinning by a skull, and when any odd idea comes from the caverns of my restless head, I grin and show my teeth, and a great many more too, in a far more joyous fashion than the said lifeless cranium can do.

"Whatever the reason, medical men are never more at fault than in reasoning on their own disorders. I seem to have bid good-bye to a considerable portion of my senses, not to talk of bottles, messages, appointments, and articles of dress, forgotten, misapplied, or neglected; of a letter put into the post-office marked paid, thrust into the common receiving aperture, and safely lodged at the bottom, before I remembered that I had written in great characters the 'paid' so cheering to the receiver, but in this case, destined only to raise the compassion, or awake the indignation of the young lady, its recipient, at the melancholy poverty of the writer. . . . .

"Now I think I know the reason of all this mental absence, and as you are a discreet young lady, I shall not scruple in confidence to tell you. I am over head and ears in love, and the object of my attachment so thoroughly engrosses my thoughts, that I have scarce a speculation to give to anything else, and though I have wooed her steadfastly, she, with the coyness and fickleness of her sex, gives me but doubtful signs of a reciprocity of affection, and I feel that I make but small progress in her esteem; and eager as I am to ingratiate myself with her, and high as I should esteem the honour of having a most thorough acquaintance with her, I know that many of my friends would imagine her a very unfit companion, and I can conceive you saying that although a lady might occasionally converse with her, a familiar intimacy would be most undesirable, and I

believe you to have more than common charity in such a case as this. Nevertheless, she is descended from a noble and influential family of very ancient origin, which can show incontestible proofs of having flourished in the dark ages, under another title, and which received great additions to its powers and influence, under the reigns of Elizabeth and James I. under the Chancellorship of Lord Bacon. If you wish to see the birth, descent, and fortunes of the family, I would refer you, not to Burke's Peerage, but to the Encyclopædia, where, under the article 'Sciences,' you will find a minute history of the family; and if you ask me which of the daughters has awakened in me such admiration, I reply, the 'Right noble the Science of Chemistry,' who in my eyes is by far the most attractive and interesting of the family. In case a kindly feeling to the writer should incline you to know more of this noble house, and its collateral branches, I would refer you to a work written by a lady, deeply versed in this branch of Heraldry, Mrs. Somerville's 'Connexion of the Physical Sciences."

The winter was a very busy and happy one. Attendance at the laboratory kept him steadily engaged for some hours every day; and the rest of the time was fully occupied by necessary study. There is a long series of letters addressed at this time to his brother in London, and we shall be mainly indebted to extracts from these for information as to his employments and aspirations. They furnish abundant evidence of great enthusiasm in the study of chemistry. It is interesting to observe how his love for this branch of science steadily increased, the farther his researches were pursued.

Before quoting from the letters, the following extract may be given from the journal :—

"*Saturday, October 20th.*—I was agreeably surprised on

coming home to-day to find a parcel awaiting me, addressed in a very pretty lady's hand, and, as it was easy to know, from Miss ———. I opened it with great glee, expecting an answer to a very odd, whimsical letter sent to thank her for a present of bottles; but how amazed and aghast was I to find in it that my poor friend, Samuel Brown, had been seized with fever the day he should have left for Berlin, and that 'accounts are very unfavourable indeed.' Poor fellow! I don't know what I should do if I lost him, almost the only friend I have except my brother; gained as a friend, though an acquaintance before, at a time when returning health and energy had sent me to the careful study of the physical sciences. I was delighted to meet in him one who so fervently reciprocated an enthusiastic love for such pursuits. The gaining of such a friend was a stimulus to more active study, and a most potent motive to steady perseverance, and many a day-dream of the future, and many an air-built castle, had him for its hero. And now, when I every day expected a letter from him, to be stunned and startled by such terrible news! I prayed to God for him every night, and perhaps God was beneficially watching over him, and preventing his reaching Berlin, where cholera is very bad. It has quite unsettled me; the idea of studying—what I thought to have done—chemistry this evening seems cruel, while a brother-chemist is lying in the fangs of fever. I cannot open my books, and instead am in a listless, melancholy mood of mind. Troubles have come thick on me: my brother gone to London to buffet with the distractions of that great city, my sweet sister Jessie lying ill of smallpox, my friend Brown dangerously ill of fever, and poor Dobbie [an artist friend] dreading the development of consumption. I have been out at Mr. Dobbie's this afternoon, and feigning a mirth I did not feel,

have succeeded in raising his spirits above their former most melancholy state, without in any degree swerving from the truth. But to my sister I can be of little use, and to my brother and poor Brown not only of none, but an anxious, passive, not even spectator, but most anxious listener, depending on letters for the increase or removal of my sorrows. I don't much crave sympathy, and my brother Daniel would suffice of my own sex; but I've lost him, and it's a terribly awkward way of exchanging feelings, the post. I would I had one dear lady, either beside me or in correspondence, but I am denied so great a privilege, and must e'en feed, as best I can, on my own thoughts, for friends of either sex I have scarcely any to share them with me. What poor —— will do, I don't know; it's a most melancholy situation, suspense is so agonizing; . . . and the risk of infection makes it impossible for my sister Mary to call there. The fortnight that's to elapse before more news come, how wearisome and long to all of us! Could it but be annihilated! I shall exist in most troubled suspense."

Reference is made in the above extract to the illness of a sister. During that illness, George's unselfish devotion as a brother was beautifully displayed. Whatever his own sorrows and disappointments, at some of which even his most intimate friends can but dimly guess, he was able to put them aside, and assume the most hearty mirth, if others were cast down. When the infectious nature of his sister's illness kept almost all aloof from her, he would not be restrained from trying to cheer the little invalid. The evening-time that brought him home was eagerly longed for, and when her eyes were sealed up from the effects of the disease, and a ray of light was unbearable, this good brother sat outside the chamber door, with a candle so placed, that no light could enter the room, and for hour

after hour read the drollest stories, laughing over them with a heartiness peculiarly his own. Wishing to give some slight token of her gratitude for all this love and care, the child said to him one night before going to sleep, "Kiss me, Dosie."[1] Immediately was the kiss given, to her great satisfaction; and not till weeks after, when the first glance at a mirror was permitted, did it flash upon her what she had asked, what the repulsive state of the lips had been, and the danger even to his life. Trifling though the incident is, it was a true expression of the generous nature, ready at any moment with unconscious grace to sacrifice life itself for the objects of his love.

The closing entry in the journal treats of lectures given at home: though written at a later date, its contents make it suitable for our notice at present.

"*May*, 1839.—Following out my proposal to amend the subjects of ladies' conversation and study, I assembled some of them in my father's house, and delivered a course of lectures on chemistry, especially the chemistry of nature. It was in the winter of 1837–38, so that I was then *æt.* 19; the majority of my audience were older by a year or two. I was greatly praised and encouraged, most kindly listened to and assisted in many ways, especially by John Macgillivray, a generous, unselfish, happy fellow, without whose aid I should have come on very poorly. This course, which began in October, was first interrupted by the illness of my sister, and afterwards, in February, by the mournful indisposition of my cousin Catherine, so that only ten or twelve lectures were given.

"I place here the names of those who smiled on a juvenile attempt, both because I would keep on record the titles of those persons who gave rise to many a happy

[1] A pet name, used through life in writing to his younger sisters.

thought, and that as I hope to address other audiences, I may not lose the recollection of my first, which was more kind, generous, and forgiving towards me than any future audience ever can be."

The correspondence with Daniel continues the narrative: —"I wish, I hope, and I expect for you all success; and I can do this the more heartily, as I can in return crave sympathy; for though it might appear otherwise, by a reference only being made to lectures and Christison, my whole time and energies are occupied in reading, writing, and experimenting for my Essay; and I only allow myself half an hour when walking, to think of my next lecture. Dr. Christison has given me liberty to try as many experiments as I like in his laboratory, and I shall not miss the opportunity. Meanwhile, I am toiling night and day, as you are, elated with hopes and depressed with fears and troubles, as you are, and feeling how much more would be my progress had I you beside me."

In a letter of March 1st, he thus speaks of one of his cousins:—

"Catherine is much the same; for some days back she was better, *i.e.* in her feelings, for the real state of the case never altered; but she is again not so well. She is in that state of mind which theorists might deny, as impossible, but which all who have felt keenly or have thought much, can enter into and sympathize with; she is entertaining the incompatible feelings accompanying a looking forward to another world and yet a lingering interest in a present. That the latter should remain is no cause of wonder, specially in her disease." What this disease was, with its

clinging to life, the reader will easily surmise. Catherine was the second oldest of the cousins, and was loved as a sister. Her illness was of long continuance, as will be seen from references in future letters. Truly the clouds returned after the rain in this household, and the stern monitor, affliction, seemed commissioned to take up her abode in it, and teach, for many years to come, lessons hard to be learned.

"I read, with very great pleasure and sympathy, of your kneeling at the altar of St. Paul's. I cannot understand the religion which mingles not with every act and feeling, or conceive of those who dismiss God with the morning and evening prayer, as too pure and holy for the affairs of this busy world. The busy world may perhaps be the scene of many actions where God could not be invoked as the spectator or disposer of what was just or good, but 'an undevout anatomist,' Dr. Fletcher says, 'is a maniac;' and while perhaps the chemist has less powerfully than the anatomist the incitements to devotion, yet must he study his subject in a wrong way if he find them not. I have no altar to kneel at but my own bedside, where I have often prayed to God for you; but there I have prayed for success in my endeavours, and *there*, should God grant me the honour of going deeper into His laws than others, I would pour forth my sincere thanks and gratitude. I found a strange verse in reading over the Psalms. I have not now time to look for the exact place, but it was to this effect, that he who obeys God 'shall have the desire of his own heart.' Do look at the passage. I think it is in the early Psalms; but of course to love God should be the *primary* feeling, though the secondary 'desire' will in our minds too often supplant it. . . .

"You say the folks ask if I'm coming to town. I think

you might have told me whether it was ladies or no. As to my reaching London, you know, Dan, nothing would give me more pleasure; and to spend a winter there would greatly delight me, and I'm sure I could turn it to very great professional benefit. Dr. Christison and Mr. Kemp would give me letters to Professor Graham, and I would perhaps get introduced to Faraday; also there are classes there that I cannot attend here, and I won't state any hypothetical objections, but I do not entertain a hope of being there. Had I gained that Essay, I should have come up in autumn to spend the winter with you; but I did not, and I ceased to look forward to the realization of my hopes. Further, and let this be your consolation, I would not like to leave Mary at present. Meanwhile, I shall be very busy preparing for my first physician's examination in May. I, in the midst of much haziness from dull weather, remain your very affectionate brother,

"GEORGE."

"*April 6th.*

"I grieve to say I cannot encourage the hope of seeing you in London this summer or autumn, and that I trust you will not either form high hopes, or, above all, deny yourself the visitation of interesting things about London with the affectionate intention of waiting for me, for really, Daniel, I know not when I shall get up. As soon as I pass my examination, which will be some time in May, I shall have to begin German, to re-study French, to attend the Infirmary, to attend (most horrible) the Dispensary,—as necessary studies and duties. Further, I shall have to write my Thesis,[1] which I cannot put off till winter,

[1] The inaugural dissertation required from graduates of medicine.

seeing I shall have abundance then to do in preparing for my second examination, with all its delights of midwifery, surgery, practice of physic, pathology, &c. &c., so that I fear, even could I otherwise reach London, I should commit an error in going, which you would be the first to mourn. I shall likely go out to Haddington as soon as I pass, but that will be a thoroughly practical journey, to have the benefit of Sam Brown's laboratory and assistance in carrying on my series of experiments in bromine, on which, if my researches are successful, I shall early publish a paper; and I shall have a very extended series of experiments to perform there, at home, and at Dr. Christison's on the subject of my Thesis; for my only hope, and it is a feeble one, of getting on as a chemist is to succeed in some projects which shall convince unwilling friends that I have some chance of success in such a profession, and this I must do before I pass as physician, for *that* consummated, I must at once begin for myself in some capacity.

"I shall betake myself to the study of practice of physic this summer and next winter, and fit myself for practice when I am set afloat on the world, should such an alternative be my only resort; but what I have ever felt is, that even although I had no liking for chemistry, I should be most miserable as a practitioner, for I am neither intellectually fitted for discerning the nice shades of disease, in observing and detecting which a physician's sagacity is shown, nor am I morally formed to grapple with the tremendous moral responsibility that in my eyes hangs over my profession, and I am physically unequal and averse to the eternal trot of going rounds; and thus I feel, that if I should practise, all labour at other things is hopeless. But of course none of these are reasons for my staying to

burden my father, or making greater claims on his house and purse, and I have too much pride and independence to be beholden to others for a livelihood, when I may make one for myself. I wrote Uncle A——, at mother's request, to tell him about Catherine, and as he has always been very kind to me, I mentioned cautiously my wishes regarding chemistry. He writes me back (in a very kind, however, and affectionate letter, in which he asks for you particularly), 'Respecting chemistry, you may find it more pleasing than profitable,' and regarding the future hopes I held out of becoming a lecturer, he says, 'I entertain the idea that it is but a poor profession.' The letter is, let me however say, written in a very kindly spirit, and he adds that I am better qualified than he to judge, and begs me to write to him soon. You see what I must expect, and that every moment between this and my final passing I must turn to the best account. I write this neither with morbid feelings towards my profession, or towards those who do not see things as I (and you) do; they shall only stimulate me to redoubled energy; and I shall neither mourn nor repine, for I have high hopes, and not unprofitable speculations, and if God grant me health and leisure, my most urgent needs, I shall not despair. All this I write as my apology for giving up the hope of seeing you. I am sure you will agree, and we shall meet the sooner and the more honourably to ourselves, when all the sorrows are past. Don't write unless your health permits."

"Laboratory, *May 4th, Friday.*

"My examinations are over, and *I am half a physician*, and so, five hours after birth, I am writing to you the good news, knowing it will interest you. We receive our summons a week before, from a kindly wish to give us time to

look over our subjects. I luckily got hold of mine at the College, so they had no idea at home that I was going up. I shall not trouble you with a recital of the toils and troubles through which I passed! suffice it to say that I began yesterday at ten o'clock, and studied straight on without stopping till three o'clock this morning, so I am rather wearied now, which is my only excuse if this letter be dull and uninteresting. I might amuse by reciting the contrivance I fell upon to keep myself awake last night. I was in the finest studying trim all day, and dreading I should become sleepy at night I pilfered a portion of tea, kept a slice of toast, a little cream and butter, which I hid behind a rampart of books, and having commissioned Margaret [a servant] to leave the tea-kettle where I put it, I made myself a cup of tea, and got on excellently; the object of all this secrecy being to conceal my intention of going up for examination to-day.

"Don't you fear that I will take into consideration the getting to London; if possible, I shall come, for nothing could be more delightful, and I could study excellently beside you, but I cannot say anything yet very definite, although I shall write to you more explicitly afterwards. . . . Albums are the most flattering and comfortable records of poetry for folks like you and me; one is sure to please, and I should never think of writing songs did not the wish to please, or promise to fill a page, form a stimulus. Now for the story of the soap-bubble, which is certainly, as the sternest mathematician would allow, a trifle light as air.

"Miss —— reproached me for not writing in her album. I told her I never wrote without being asked, but would willingly if she wished. On receiving it, I inserted the following verses :—

"TO A SOAP BUBBLE.

" Bright little world of my own creating,
Blown with a breath of the viewless air,
Thy fragile form in circles dilating
Seems destined each hue of the rainbow to wear;
The amethyst's purple is given to thee,
And the ruby has lent thee its own ruddy hue,
And the emerald's green, like the sparkling sea,
Mingles its tints with the sapphire's blue.
Thou art a sun, rich in thy brightness;
Thou art a moon, silvered with whiteness;
Thou art a planet, begirt with a glow
Of colours enamelled above and below,
As only the pencil of light can bestow.

" Who knoweth now but that each starry sphere
That silently floats in the heavens on high,
Was once a gay bubble, pellucid and clear,
Before it was given a place in the sky,
And blown by the lips of some young angel, trying—
While his close-feather'd wings were yet tiny and frail,—
By other bright things, and their fashion of flying,
To learn on his own gilded pinions to sail?
For thus one by one the planets were blown,
And the bright milky way with starry gems sown.
In the ether above no storms ever blow
To crush their frail forms, or toss to and fro
Those delicate worlds,—so round in their orbits they ever shall go."

"*May 28th*, 1838.

"It is now a long time, nearly a month, since I wrote to you, and without the excuse of busy study to plead for silence. Not a line has reached you from me since I wrote immediately after passing. I told you then that I purposed going to Haddington, on Samuel Brown's invitation. At the time, however, which suited me best, some friends came out to see the family, and it would not have been convenient to receive me, so I was left disappointed in the

very beginning of the flitting [*Anglicè* removal]. You will not wonder that I hesitated little to accompany Mr. Mackay to Glasgow, in which place, and the adjoining towns and the like, I have spent more than two weeks, having returned to town on Friday evening from Lanark, which I made the goal of my journey."

"Gayfield Square, *June* 18*th*, 1838.

"My only excuse for not writing to you, has been the apparently paradoxical one—to you, I am sure almost without meaning and weight—of having too little to occupy me! not that I have been idle, for that I cannot be, but my business has been more of the body than of the mind; more of the feet than the head. As soon as I came home from Glasgow, I knew I had to begin dispensary duties, and set about finding one. I found the New Town one full. The Old Town Dispensary had the Grassmarket district, which they offered me; but I felt little inclined to take on me at once the onerous responsibility of so large a district, in which I knew I should be little assisted by superior doctors, but left to blunder my way on through fevers and wounds and distempers. In an agony of fright, and a delirium of suspense, fearful of committing evil, and by the very fear unnerving my hands and paralysing my energies, in short, 'doomed to wade through slaughter to' a knowledge of practice,—and bent on learning the profession of a doctor, I articled myself to the Port-Hopetoun Dispensary, where, though their list was full, I was taken on as a subsidiary; the period I serve being sufficient to give me claims to a certificate, so that I learn and get over all difficulties at the same time. The great recommendation, however, is that, instead of being a principal, I am hooked to my good friend John Niven, with whom I every day

perambulate the delightful purlieus of the West Port and the neighbourhood, sometimes steering across the 'bridge that spans' that prince of ditches, the canal, and at other times winging our flight to the Grassmarket; and winding up all by journeying to the West Kirk Charity Workhouse, where we have charge of all the little urchins' health and welfare. So you see I am a great man in the way of practice, and not destitute at least of patients, and the means of learning that branch of medicine.

"I trot about every day from ten till two, and most tiresome it is, and when I come home, I am fit for very, very little. Up to the present time, however, I have taken geology in hand, and get on with considerable speed, and with very great delight; but I have got nothing done at chemistry. There is no room for working at home, and I cannot work to my heart's pleasure in Dr. Christison's. I must have no one overlooking, even kindly; so, up to this time, I have been miserable from want of my laboratory, and means to try, by the test of experiments, the projects of my brain. It is the disagreeable mood of mind, attendant on this state of things, which has kept me from writing, though I had plenty to say, and have a great deal more than this letter, big as it is, will hold. To-morrow sees my chemical labours begin, as you will learn before you finish this letter; but lest I make this a mere preface and apology, and because I have been wearying to say it, let me heartily congratulate you on your success. I cannot, as mother did when she read it, bring tears to my eyes! that becomes a kind mother; but a kind brother will, with exulting, joyous feelings, wish you all the comfort and happiness so auspicious an event should bring, and feel his own soul bettered by the knowledge your letter conveyed. I am proud of you, Daniel, with your high thoughts

and high hopes, and persevering laborious duties, and unresting application. . . . .

"For the present I bid you good-night, and as night brings sober, chastened, religious feelings and duties, let me only add the hope (alike for both of us) that earthly things, however noble, will not shut from our straining eyeballs the higher things which must swallow up all other feelings, when death-beds and eternities come. God bless and preserve you, my dear brother, from all evil and snares, and myself too, for I have many. Good-night."

"*June* 19*th.*—I do not resume with good-morrow, for night is the time with me for writing, and I have just fallen to again to your epistle. Having discoursed of your prospects, occupation, and the like, let me say a word of my own. After the first re-beginning of Dispensary rambles was fairly past, I began seriously to think of some way of getting my chemistry prosecuted, and it came into my head, as my wisest plan, just to have a room, a garret, or the like, and turn it to good account. I betook myself to requesting the assistance of some old dames to get me one. Chancing to call on Mrs. —— to see Samuel Brown, I had to sit a while, and mentioned the wish to that old lady, who immediately stalked about the Lothian Road, and such places, in search of a room. Whilst engaged thus, I called at —— Street, and mentioned it to Mrs. ——, who at once offered and gave me her most kind and most useful assistance, for she sent me over to a pensioner of hers, a widow, who had rented a room for six months or so, but having lost her daughter, had gladly taken a place as housekeeper in a family. From her I got the key of the room, which will cost me nothing but a trifle a week to the old deaf lady who sweeps and sorts it; and will be as it is

a very palace. It is situate in that strange and not very decent place of Edinburgh, Richmond Court; but, as far as I have yet seen, it is an excellent little corner, with the best window in the court. I have a goodly sized furnished room—a perfect palace of a laboratory; the window to be sure does not command a very fine view, but lets in a great stream of light, that valuable auxiliary to all sorts of researches that don't ask the shelter of darkness. I have five arm-chairs, with flaming yellow covers; walls adorned with sewed samplers, portraits of Queen Mary and Richard Cœur de Lion, and which is a great deal better, a beautiful, unframed, fine engraving of one of Gerhard Douw's pictures, not to mention an elegant looking-glass, wash-stand, tumblers, glasses, &c.; and a press, the key of which I am promised, if I don't break the old lady's china.

"What a delightful walk it is round Arthur Seat! When the evening is dull, I walk through the valley and the Hunter's Bog; when any way clear, I journey round the Radical Road, for the sake of the extraordinary view, never two nights alike, and yet always so beautiful. I wonder some of the painters don't build themselves a painting-box, as the sportsmen do a shooting box, beside the Cat-nick: the whole line of buildings, the alternation of land and sea, are so fitted to show every charm which varied atmospherical effects can produce on a scene. If I had a son who showed any capacity for landscape painting, I would stick him up, I think, on Salisbury Crags, and disinherit him if he did not beat Turner. The scene is altogether so wondrous, so changeful in all its bearings, and so soothing to a mind busied with turning over a thousand subtle subjects, that I shall never weary of it, and probably as long as I go out to Richmond Court, I shall come home that way.

"I said I did not know when I should be up in London, but since I wrote circumstances have occurred to change my intentions, and I think I shall be able to spend the month of October with you. I don't think I can get away sooner; perhaps I may, in the end of September. However, believe me, your loving, affectionate brother,

"GEORGE."

"*7th August*, 1838.

"I am going to publish a paper in one of the Journals, on a new exposition of a chemical law, which has been debated all over Europe, and argued one way and another, without any one being able to prove which of two opinions was the true one.

"While engaged in a wholly different inquiry, I made a little discovery which threw some new light upon the subject. I was confined at home two days unwell, and tried an experiment or two, which proved my views, and, in short, before the week was done, I had proved my point, beyond the possibility of contradiction.

"Samuel Brown recommends me to speak to Christison to get it put in the Royal Society's Transactions. I intend doing so to-morrow. I was only kept by a dread of seeming to over-value the matter, and especially by an unwillingness to seem courting patronage; but I'll see him and be guided by his conduct to me."

Passages in the foregoing letters have alluded to a long cherished desire to visit his brother in London. It was a great delight to him when it became at last possible to satisfy this desire.

On September 11th, the final arrangements are announced:—"You will be surprised not to have heard from

me before this. I have waited to be able to tell you everything as definitely as possible. Mary and Jeanie are now home, both looking a great deal better, and in all respects improved. Their arrival sets me free to set off when I choose. Now, I am not coming up directly by one of the Leith and London Steamers, but by Hull. I shall arrive there on Sunday evening, stay all night with our old friends, leave on Monday morning, and be in London on Tuesday afternoon or evening. . . . I am in no mood for writing, have been so knocked about, have so much to do, been so late up, and am so sleepy, that I shan't write a word more. Everything it is desirable you should know, I keep for oral communication.—Believe me your very affectionate, loving, sleepy brother, "GEORGE."

A week later we have the following to his mother :—

"George Inn, Hull, *Monday*, 17*th September*.

"The best of friends are often bad advisers, and so it has proved in my case ; for the 'Innisfail,' instead of arriving in Hull on Sunday at twelve o'clock noon, did not get in till one o'clock at midnight of Sunday, and nobody got ashore till this morning.

"On Saturday, up to eleven o'clock, P.M. when 'I turned in,' the weather was most delightful, and the voyage in all respects very pleasant. I did not fall asleep for an hour, and then I tumbled over into a doubtful snooze. I believe there was a sensitiveness among all present to any alarm, from the late accident on the station ; and, accordingly, when the engine stopped at two o'clock in the morning, I and many others awoke. I did not know what hour it was then, and being aware that a gentleman and lady were going ashore at Scarborough, I thought it would be

the boat stopping to let them out. One of our number, however, got up and went on deck, and learned that some pin in the engine had broken, and caused the stoppage. However, it was deemed so trivial that he went to bed again, and we began to talk about steamboats and accidents, and the like. Now, you must notice that I slept in a room containing four berths, three of which were occupied by Englishmen, the fourth being occupied by your Scotch son George. I was soon embroiled with the whole three about the nature of the last accident: and when I pushed one of them too hard, he began his speech by telling me, that 'we in arguing in *England* do so and so,' implying a full anxiety to show he knew my nation, and hated it. However, disregarding the taunt, I baffled them all, and was not a little amused next morning, when a surgeon of dragoons, who had lain in some corner or other within earshot of us, remarked to one of them on the amusement he had had listening to our conversation, adding, 'There was a great deal of eloquence in it at times.' I take the credit of all the eloquence to myself, the precious triumvirate can divide the remainder of the praise among them. I and the surgeon enjoyed a laugh at them afterwards. All that is episodical. After talking a while, I thought I heard the steam cease blowing, which is always dangerous if the steamboat be still, and I immediately dressed and went on deck. The steam, however, was blowing away all right, but one of the engines was completely maimed. The whole crew were at work unshipping the broken engine, a work of nearly two hours, during which time we were lying off North Shields, on the Sunderland coast. The night was most beautiful, the water as still as a mill-pond, which was well for us. Had the wind blown hard, it would have been scarcely possible for

us to have managed; and had the gale blown on the shore, nothing could have saved us but casting anchor, which cannot always be done on these coasts. As it was, we not only lost two hours in absolute inaction, but being palsied of one side, we could only creep along at five or six miles an hour, so that it was one o'clock last night before we reached Hull."

CHAPTER IV.

RESIDENCE IN LONDON—DEGREE OF M.D.

"In this theatre of man's life, it is reserved only for God and angels to be lookers-on."—PREFACE TO BACON'S 'Advancement of Learning.'

IN the renewal of the joyous companionship of former times, the brothers were truly happy. "I can't tell you half what I have seen," George's first letter to his mother says. "I've been at the British Museum, and gazed with delight at the splendid fossils, the huge crocodile-like monsters of the ancient deep, and one specimen I wished you had seen of those marks of beasts' feet which you used so much to laugh at. . . . I called on Professor Graham, and received a most courteous reception. We talked together for an hour and a half. I told him some of my speculations, and he smiled, as all older and wiser heads always do. I was invited to come to the laboratory whenever I listed; but the distance is tremendous, at least six miles from Daniel's place.

"I dined last night with Professor Graham, and I spent a very happy evening among a circle of young chemists. I stayed behind them all, and had a long talk with him, from which I learned a great deal, not reaching home till one o'clock, so great are the distances.

"I am afraid I shall not see Faraday. He's not in town at present, and his lectures are not begun; nor shall I be

present at a meeting of the Royal or any other of the Societies. This is just the worst period of the year for all these things. Some of them begin in November, the majority not till February, the beginning of the fashionable season, when the titled people return to town. I must, therefore, depart without seeing these men and things. Yet there is still a chance of seeing Faraday; but I fear none of beholding the Queen."

At the close of a month, when about to return to Edinburgh, the offer of a place as unsalaried assistant in the Laboratory of Professor Graham, now Master of the Mint, but then Professor of Chemistry in University College, caused a complete change in George's plans. The advantages it offered were too great not to weigh strongly with him, as in no place in this country could better opportunity present itself for acquiring a knowledge of analysis and the other branches of Chemistry. He wrote to consult friends at home, saying to his mother—"I will not make a vain parade of the grief my non-return will give me. A thousand links of the dearest kind which nothing here can make up for, draw me to Scotland or Edinburgh; but you, I am sure, would be the first to say 'go.'"

The week of suspense caused by the tardy postage of those days was happily ended by the receipt of the desired permission to remain. He accordingly had to make arrangements for a lengthened, but not unwelcome, stay in London. His residence there extended over five busy months. The advantages of his position were by no means so great as he had anticipated, and on the whole, his sojourn in the great city was in many ways unsatisfactory to him. But with his eager temperament, his wide sympathies, and his openness to influences of all kinds, we cannot doubt that he was in many ways benefited by the experiences

of that time. A few days after the final settlement of his plans for the winter, he thus reports to the home circle—"I have not completely recovered my chemical vein; besides the dissipation of thought which occurred during my idleness here, the long distance I have to go every day, and the consequent fatigue, as well as the unsettled nature of my views yet, have hindered me reacquiring the thoughts which were my summer companions. . . . Let me say a very little of the Laboratory and my companions there, as you will be anxious to know with whom my days are to be spent. I have at least entered on my labours with the best wishes of my preceptors and fellow-labourers. Both Mr. Graham's assistants, Mr. Young[1] and Mr. Playfair,[2] are glad of my addition to their number, and give me all the assistance in their power, and as they are both good practical chemists, and Playfair a geologist, I hope to profit by their society."

Among the students in the Laboratory this session was Dr. Livingstone, now distinguished for his labours and discoveries in Africa. On the return of the celebrated traveller to this country a few years ago, it was a pleasure to him and George to renew their previous intercourse. A much prized copy of his travels bears the autograph inscription, "To Professor G. Wilson, with the kindest regards of his friend and class-mate David Livingstone." Letters from the rivers Shire and Zambesi have come to this country since George Wilson's death, in which Dr. Livingstone speaks of specimens intended for the Industrial Museum of Scotland. "I have collected," he says, "some little things for you, but they are really so rude that I have

[1] Mr. James Young, Bathgate Chemical Works.

[2] Dr. Lyon Playfair, Professor of Chemistry in the University of Edinburgh.

doubts whether I ought to send them. The mill for grinding corn, for instance, is a great block of stone with a hollow worn in it of about three inches in depth, and the mortar, exactly like the Egyptian, is about the size of a man's body. A web in process of weaving, is an uncouth affair, as indeed everything here is. They have not improved a bit since Tubal Cain, and those old fogies, drove a little into their heads. Such as they are, however, you shall see them some day."

Further details of Laboratory duties are given in writing home. "I go to the Laboratory at nine o'clock, and do not finally leave it till five o'clock. Long as these hours are, they are agreeably broken up : thus, at eleven o'clock, I go in to hear Mr. Graham's lecture ; at two I go home to dinner, and at five I leave finally. Three days a week there will be a practical class, where I shall have to assist, so that there will be no room for wearying. You will observe I am never more than two hours continuously at work : at Dr. Christison's Laboratory I was often four or five, and as many at Richmond Court always. My lodgings are at a mile's distance from the University, so that I shall have a comfortably long walk, to and from my working place, twice each day."

In another letter, he writes,—"I shall not send any papers to the journals, so do not look for such things ; my Thesis must be my first labour, and till that is done, every other subject must be laid by. Nor is it likely I should write if I had the time, though I have many things in hand ; I am more anxious at present to be a learner than a teacher, and still look to more profitably extending science hereafter, by storing myself with all the truths it has already gathered.

"Mr. Graham is an excellent teacher; so well versed in his subject, and so earnest in displaying it aright, and in impressing it on his audience, that the hour of lecture speeds very rapidly away. I cannot make intelligible to any of my non-chemical friends the nature of the inquiries he is pursuing, except perhaps by saying, that he is prosecuting the study of the 'Laws of Combination' between different substances.

"Another assistant, as well as I, is working at his subjects: the other pupils, four in number, are labouring for their own profit. We have at last succeeded in getting a corner apiece in the Laboratory; before this desirable arrangement was accomplished, we were always in each other's way, and half the analyses were ruined in their middle stages by the carelessness of some one else than the experimenter. It would often have been amusing had it not been very provoking, to return anticipating the progress your analyses had made, and find your vessels, materials, ay, everything gone,—some other philosopher having found a use for your apparatus, and not troubling himself to inquire whether the vessel and its contents were precious or no. That is past, and it is now death by law to meddle with anything on another's table. Suffocation in the laughing gas is the method proposed for the infliction of capital punishment."

"*February 9th.*

"I am now very busy; the class is only every second day, but it includes thirty-four students; and so large a practical class involves a great deal of trouble. I work at it every day from nine till five, and sometimes till six or seven; and I have sometimes had to spend my dinner hour in the Laboratory. All analysis or personal improvement is at an end—quite at an end. My health and spirits are quite

good, but my daily occupations are uninteresting, and I never get a walk, even through the streets of London. It is this makes me wish my friends to write to me, as I have no materials whence to devise letters for them. I was lately visited by one of those yearnings which I think must often visit London-detained Scotchmen,—an intense fancy for a walk by a babbling brook, a bright conception of hills and rocks and trees, such as I have somewhere seen long ago either in day dreams or night visions; but such thoughts I always have in the spring months, and I believe I could as little gratify them in Edinburgh as here. . . . Talking of poor folks, and thinking of the black man, and the other black man, the sweep,[1] I think I can now sympathize with a sweep's Sunday feelings. One of my prospects of the day is, that I'll have my hands clean the whole of it. . . . Remember me to all the poor people, and if you ever long for me, think how soon you shall see your most affectionate son, "GEORGE."

Daniel notes in evidence of the versatility of taste which kept the balance straight between work and recreation: "Leisure was found in spite of much occupation, for an occasional evening with the poets; and writing verses grave and gay. One or two of his earlier efforts have already been given; and a memorial of the poetical pastimes of this season lies by me now, in the form of a well-filled MS. volume of our joint rhymes, to which he more than once refers in subsequent letters.

"The volume is illustrated with pen-and-ink sketches, and one of the lighter effusions of 'Bottle Imp's' (George's

[1] Acquaintances made in the Infirmary during his apprenticeship, and kept on as pensioners.

favourite *nom de plume*) quill may be given here, though the contents of the book embrace grave and earnest thoughts, as well as quirks and quiddities :—

MERMAIDS' TEARS.

Pearls are the tears that mermaids weep
When they their midnight vigils keep,
For mermaids sigh, and sorrow too,
And weep, as well as I or you.

Perhaps you've thought, perhaps believed,
That mermaids, when their hearts were grieved,
Wept briny tears ; 'tis even true,
'Tis they with salt the waves imbue.

But tears more precious must be shed,
When those whom they have loved are dead,
The mermen of the deep, whose charms
Have wiled the mermaids to their arms.

And nereids catch them in their shells,
And hide them where the sea-fish dwells,
Till years revolving tint them o'er
With hues they did not know before.

Then from the depths of Eastern seas,
Where dive the swarthy Ceylonese,
The tiny shell-fish, from the rude rock torn,
Through waves unwelcome, to the light is borne.

The unconscious casket of a gem,
Dies to adorn a diadem ;
And tears that trembled in a mermaid's eyes
Become an English lady's prize.

During this winter the illness of his cousin Catherine had caused much solicitude. For above twelve months, she had been almost entirely confined to bed, and George's letters abound in the kindest messages to her. Mary's health was also indifferent ; and dark clouds hung over the household.

On March 26th, he writes : " How very mournfully you are circumstanced at home ! I shall soon be with you and find myself in the midst of all the sorrow ; till then, I am the occasional sufferer from sad reflections, but I do not revolve these subjects half so often as I should do, being engrossed too much about far less profitable things. My Thesis has knocked everything else out of my head. I had a severe fit of sickness after finishing it, which does not seem to have left my head clear yet." Referring to this letter he says, ten days later :

" I wrote to father yesterday, in reply to a kind letter from him, saying that I should certainly return at the time I stated. I must return immediately and study for my passing.

" They must all excuse me not writing, as I shall be so soon home, that I may much better keep what I have to say till I come home, than hastily scrawl it from here. How cold and sad and dull everything seems ! I have had nothing but disappointments, cruel disappointments, all winter, and you have had disease and death for your portion.

" Before I come home to you, I shall run into Kent for two days, and snatch a look at the old cathedrals.

" You are better, I am very glad to hear, and Mary is better, and Jeanie and Jessie are well, all which things do greatly gladden me, and enhance the pleasure with which I contemplate my return. Meanwhile, I remain, your sincerely attached son, " GEORGE."

His departure for home was unexpectedly hastened by intelligence of Catherine Russell's death. Though prepared in a measure for this sad news, yet the brothers were taken by surprise ; so great is the marvellous change from life to

death, we can but very rarely feel otherwise. All plans were cast aside, and George hastily packing up his books and papers, bade good-bye to the friends he had made in London. Hastening to Edinburgh by way of Liverpool, he reached it in time to bear a part in the last sad rites with which his cousin's remains were committed to the dust, in that hallowed spot, where now he and two others of the group of mourners present on that April day are laid to rest.

In a letter to Daniel, written soon after his return, he says :—

"Catherine was little altered; a little more emaciated than when I left her, but serene and beautiful. I thought her very like her mother, as I remember her. I kissed the cold, blue lips, and wished I had but been in time to have bidden her farewell. Every cause of sorrow that embittered her life seems to have been lessened, as she prepared for death, and the kindly, affectionate feelings she had for all of us were in full force. . . . I remember the thousand kindnesses she showed me, from her earliest days; the generous presents which afforded a thoughtless schoolboy the means of gratifying many an eager desire, and the manifold unnameable favours freely rendered to an often ungracious recipient. The dead are hallowed. To think of them as they lived, is, with me, to think only of their love and their noble qualities; if the image of faults comes back with their memory to me, it so swiftly reminds me of my unkindness to them, that I *dare* not, even if I would, think evil of them. Catherine suffered little before her death; she retained her intellect unimpaired to the last, and with most stedfast declarations of firm hope in Christ, increasing as death drew near, she sighed away her spirit, and went to be with God. James was desolate and woebegone, but by

timely conversation I have won him to a brighter mood, and he daily grows more cheerful."

A supplement to his Thesis was the first work that occupied George on his return home, followed afterwards by study for his last examination for the degree of M.D. Early in May, he tells his brother, "I am zealously prosecuting my professional hopes; and, weighing domestic and professional hopes together, I shall have no reason to regret that I came back here. This is the place for me, Daniel. The advantages for studying are very great, and I am getting acquainted among the enthusiasts in science here, whom I too much neglected. I shall look among my peers now for welcome and assistance; and trusting to enthusiasm and perseverance, I do hope for a name and a fame among them, worthy of myself and of us all." A pen-and-ink portrait of George, taken by an artist friend, accompanies this letter, of which he says: "How like you the enclosed likeness of your loving and loved brother? . . . . . I shall here transcribe for your quiddity book, if they are worthy of it, some lines I wrote on Sunday to a Polyanthus, which mother loved.

"How the rich cups of that so lovely flower
Lift to the heavens their purple velvet leaves,
That every petal freshened by the shower
Which falls in dewdrops from its slanting eaves,
May feel the warm sap through its vessels run,
In glad obedience to the glowing sun!

"Each fragrant chalice breathes upon the air
A scent more sweet than censer ever flung
In clouds of incense, blinding all the glare
Of garish candles, when the mass was sung:
'The long-drawn aisle,' and the cathedral's gloom,
Ne'er felt the richness of such rare perfume.

"With forms more graceful, and with vestments clad,
Such as the haughty prelate never wore,
They give to God an adoration glad,
That well might teach us all our souls to pour
In high-souled, earnest, heaven-uplifted prayer,
To Him who doth for all his children care.

"We are all pretty well. Mary not so well as she was; but some cold east winds having blown by, I look for her soon being better again. Write to mother soon. She tells me I am not improved by my visit to London, which of course means, I am worse. Don't you earn this character."

The next letter to Daniel gives a choice specimen of the fun ever ready to brim over on the slightest occasion. The British Association met that year in Birmingham, and the possibility of attending its meetings is alluded to.

"Is not this letter-writing a poor, lean, meagre apology for talking and laughing, and looking happy and looking sour, and being merry, and being perverse, and sitting side by side, and drinking and smoking, and seeing each other's faces, and watching eyebrows going up, and eyes sparkling, and brows knitting, and lips pursing and pouting, and lines moving from corner to corner of your friend's face? And what aid lendeth the sketch of my *viznomy* in helping you to realize my April-day countenance, and fill up the blanks of my written talk to you, by thinking of the look which tells the sentence before the words come, and might teach us to keep our lips closed, and be content to make faces at each other? I will invent a system of symbols, and chalk down eyes and noses, and lips and brows, and tell my tale by some other way than blots and blurs, and stops and commas, and scrawly sentences. It is no use writing you news; every fact is twisted and set awry before it reaches you. Our epistles always set off at the same time, and, like

the fleets of Bonaparte and Nelson, which crossed each other in the dark seas some half dozen times and did not know it, come athwart each other, and pass on to spread false intelligence among us. A great pile of unanswered questions weigh down my faculties, and would rub the nib off my pen if I tried to reply to them. Think not that you know anything about us here. Publish nothing that reaches you. Be very wary of reflecting on the ideas you gather from my letters. The very moment after I send a letter to you, something arises to alter the truth of what I have written; and the next morning a letter comes from yourself, which by half anticipating, yet in a different way, what I had been writing about to you, tumbles me down from the height of satisfaction, where I had been regaling myself with the idea that I had cleared scores with Daniel. And yet the crossing of letters (not ladies' crossing, which I love not) sometimes effects good, as in the present case; for when I wrote the last letter, I had abandoned the idea of going to Birmingham. But your most kind, welcome, very delightful letter urging it on me, and reminding me of what, in the ungeographical cast of my brain, I had absolutely forgotten—the nearness of Birmingham to London, has set me a thinking again on the matter, and I think I shall be able to accomplish it. Although my plans are still green and immature, I write that the damping of your thoughts on seeing me, which my last letter may have occasioned, may be effaced by the shadow at least of a hope. I shall not stay long in Birmingham; probably come away before the end of the time. Samuel Brown will go up with me (if I go; if I don't, he says he will not either), and he'll go on to London too; so that, if things work well, we'll give you enough of our poor presence.

"If I had been brought up at the desk in the '*Dr.* Sir'

one-page school of correspondence, I would stop here, having written what I took up the paper to tell you about; but, if you *oblige* me to write letters to you, you must read all I write to you. And having discoursed largely on rational matters, like an oracle, I must now have a little room allowed me for some antic gambols. I have had a huge share of misfortunes lately, all of which have concerned my upper works. They have been *capital* occurrences; and have come nigh unto affecting of my brain. I am still, however, lucid, and take the opportunity to record them for your benefit. I think I forgot, some long while ago, to tell you that, when I one evening, 'high as heaven exulting,' clomb Arthur Seat, a breeze, an envious puff, whirled my good hat 'sheer o'er the crystal battlement' of the lofty pinnacle. I rushed in desperation after it, but the hat, having taken a side chase before it descended (?), was whisked out of sight before I could follow in hot pursuit. I galloped down to the Hunters' Bog at break-neck speed, but all to no avail (here I want a line from Gray's Elegy, written in anticipation of this event, to the effect, 'Nor on the hill nor in the *bog* was he); no hat could I see, and no hat did I find. I strongly fancy that it ascended, and was borne aloft by some 'cross wind' to the limbo of vanity, which, as according to Milton it contains monks' cowls, could never refuse a place to a good twenty-shillings, stuff hat, not much the worse of wear. If it was refused admittance there, I incline to the idea that it went up among the stars, and forms a new constellation. It would probably settle upon the locks of Berenice, whose tresses have too long 'wantoned in the wind' not to feel glad of such a covering. You remember who taught us about 'Coma Berenices.' I'll speak to the Astronomer-Royal when I'm in London, and set him to point his telescope in that

direction. It would quite suit Sir James South for a new letter in the *Times*. Well, I got a new hat, and thought to treat it handsomely; but one day, in Princes Street, it took advantage of a favouring gale to bounce off my head, and after rattling along, to the great delight of the lookers-on, for nearly a division, was captured, with a compound fracture of the upper edge. A cap doctor (not a capped one), by means of a ligature, healed the breach; but, as I can assure you, it was never the *same* since. This injury to its upper story deranged its intellects; and the consequence, the fearful consequence was, that when I was seduced by John Niven into entering a bathing coach, two days ago, my hat took advantage of my head not being in it to rush with insane energy into the waters. Nor was this enough, for not content with suicide, it strove to commit murder by dragging in with it my inoffensive gloves. After being two or three times overwhelmed among the waves, and battered on the steps of the machine, it was dragged out, carefully wiped, and being planted on my head (which it kept cool) it dried as I walked up,—doubtless to the great delight of the passers-by. John Niven's hat, actuated by a generous impulse, bolted in after it, but it suffered little, having been quickly rescued by its vigilant master. I must have a gossamer at three-and-ninepence."

The next letter says, "I have offered myself as a lecturer for the Philosophical Institution here; but I fear all chances are gone there. They propose to let the Association lie dormant for a couple of years, and give the folks time to digest what they have learned. In truth, last winter did not get on swimmingly, owing to the absence of popular speakers, and they do not wish to try it again. However, I was told by the Secretary and Treasurer that if I gave them in a syllabus of my proposed course, they would give

it every attention; this I shall do. Failing this, I shall lecture somewhere else, write papers, teach chemistry even in a boarding-school; anything, so as I am kept among the retorts and crucibles. Whatever happens I shall not regret London and *its advantages*."

In June of this year, 1839, George passed the remaining examination necessary for the degree of M.D. His doing so was, of course, an occasion of much joy and many congratulations. In the letters which follow, he announces his good fortune, with particulars, to members of the family absent from home.

"My dear Daniel,—I shall never more, rightly or wrongly, divide with you the title of *Mr.*, for I am *now a physician* (three cheers and a hurrah!) having passed the dreaded inquisition yesterday, so that I am not twenty-four hours old at the time I write you. I did not intend or expect to go up to Physicians' Hall for two weeks yet, and had made almost no preparation, having been writing my Thesis, and writing letters and making out abstracts for Samuel Brown, and procrastinating in the expectation of getting John Niven's assistance. Now I can offer assistance to him, and help him in his difficulties. It was a much more simple thing than I expected, and it had need to have been, for I only studied a week for it, but that was a very hard week's work. I began Thursday before last in the afternoon, and worked on that day and every succeeding one up to yesterday, thirteen hours a day, beginning at nine o'clock, and getting to bed at one o'clock A.M. I contrived to go twice through a huge octavo of 600 pages, of 'Practice of Physic,' another of 700, besides smaller books innumerable. On the Sunday, I went through the morning service

of the Prayer Book at home, and then took to Surgery, which I nearly finished that night.

"The only one of the examinators who bothered me much was Hamilton; but he smiled, told stories, and answered his own questions, and declared himself quite satisfied, the which I did not contradict, although, when the examination was over, I apologized for having answered so ill, as I had been working at chemistry all winter. He would not, however, hear me; said I had answered quite well; so that I must fain lay that unction to my wounded pride, which does not, however, suffer much on this subject. I was more fortunate with Home, who took me on the very subject I had made a particular revision of on the morning of the examination, viz. measles, small-pox, scarlet fever, and the like, in which I perfectly succeeded in satisfying the gentleman, as far as his deafness would allow him; there are worse faults than that last in an examinator; and when he asked me some inconvenient questions about skin diseases, I led him away to a more familiar subject. Dr. Traill questioned me regarding the differences between the appearances when men are hanged by the neck till dead, and when they are strangled on the ground by a rope twisted round their throats—in short, on the philosophy of burking; I amply satisfied him on all these pleasing topics, and was sent from him with high commendations. Dr. Christison let me very easily off, with a few words about creosote and prussic acid. Sir Charles Bell, a most gentlemanly, kind examinator, gave me a few questions regarding the diseases for which legs are cut off. And here am I waiting only for the mystic touch of the medicating cap to stand forth to the world—a physician! What the exact etiquette as to the assumption of the title before capping is, I don't know, but as I have *paid the fees*, I make no scruple

of fully doctorating myself. Tell any ladies who are about to write to me, that any epistles addressed *Mr.* Geo. Wilson will be sent elsewhere."

"My dear Sister Mary,—When I last wrote to you, I told you I was a physician grub, a caterpillar eating of the coarse food which suits the palate of an imperfect animal. I am now a winged butterfly, that is, a PASSED PHYSICIAN. (Three cheers and a hurrah !)

"Yesterday, between the hours of one and three o'clock, I underwent the transformation, and emerged from my chrysalis state, leaving my case (*i.e.* £21) behind me, and soared aloft (that is, walked, I did not very well know how) into the blue empyrean (*i.e.* along the pavement leading from the College to Gayfield Square), in a mood of mind which only those who have tasted of the horrors of an eternal caterpillarity (*i.e.* of being a *sticked* doctor) hovering before them, can appreciate. But I will close my wings, as yet unsoiled and unfeathered, and come down to the earth, that it is to say, I will remember that 'this is my right hand, and that is my left,' that I am sitting in an arm-chair, writing to my dearly beloved sister Mary, who is recovering her health among the breezes that float over the rugged Ochils.

"Well, then, in calm and sober seriousness, I am now an M.D. with bright and beautiful visions of gold-headed canes held out to my grasp; of long, tapering fingers, put past muslin curtains, that *the doctor* may feel the fair invalid's pulse; of tendered guineas, and received bank notes, beside honours showered on my laurelled head; and a tail of names added to my Christian cognomen, sufficiently long to draw a saint from heaven, if he got entangled among the A's, and B's, and Q's, and S.S.S.

"I am overflowing with the milk of human kindness to

every one, and prodigal of good words and benefits to all around me. I am in an ocean of self-contentment, swayed about by every changing impulse; I am a fettered slave with my limbs set free, and my ears undoomed to listen to the music of my chains. In short, though the 'world is all before me where to choose,' and I am rudderless, compassless, unprovided with ammunition, and about to taste of 'the fever, and the strife here, where men sit and hear each other groan,' I am as light-hearted and as gay as if 'heaven had opened on my view,' and I had left 'earth and its dull cares behind me.'

"Like the thirsty convalescent from a malignant distemper, who declared, as he drank his invigorating wine draught, that the gods knew not what nectar was, for they never had the 'yellow fever,' so I say, that you must try the tortures of a medico's fortnight before his examination, before you can revel, like a summer fly, in the feeling of perfect liberty.

"By working devouringly in gulps at my cabbage leaves, I managed to go over a great deal; and though I very nearly knocked myself up with this sort of work, now that it is over I am perfectly well satisfied, glad that I have the power to work double tides when there is a need for it."

From his cousin James, the following congratulatory letter was received:—

"Glasgow, *5th July*, 1839.

"My dear George,—I received the news of your distinction with very great pleasure, which was the more enhanced as it relieved me of certain doubts and fears I had begun to entertain about your success, for Miss Mackay had not heard of it, and you know I did not hear from home

for a long while. I expected you would have let us know, and the only event of sufficient importance to have prevented you from doing so, that occurred to me, was that perhaps, by your close application, you had so etherealized yourself, that you had evanished through your window in a flash of genius, and were perhaps at the moment, when my cogitations were employed about you, twinkling on the tail of the Great Bear. I was debating with myself whether to put it beyond doubt, by a personal examination of the heavens, when aunt's letter arrived, and certified me that you had at last been put in possession of the great object of your ambition. And what was that? Two letters of the alphabet! Nor would this reward which you proposed to yourself have been so contemptible, if those said letters had been out-of-the-way ones, an A and a Q, two Q's, etc. but as for an M and a D, two of the most commonplace members of the A B C,—to think that they should have been so desired, I should say you were the victim of monomania, though I could scarcely designate by the term *mono*mania what is equalled in its melancholy nature only by its universality. But when we pass from the mere letters to what they may imply, how much truth do we find contained in them! Passing over the common explication, Doctor of Medicine, we have firstly (synonymous with it), Man of Decoctions; secondly, Dedicated to Manslaughter, Deliverer of Many, Deluder of More, Death of Most, and lastly a more agreeable truth, that being a Doctor you are Marriageable. These, especially those preceding the last, I would present to your attention, hoping that the consciousness of what is thus implied in the Degree you have obtained may, like oil upon the waters, serve to moderate the feelings of your joy, and ever, like the aforesaid oil, remain uppermost in your mind. You will now be able,

nay, in a manner be compelled to take to other and more congenial studies, for the moment you are struck with the black cap, it is signified that this is the last step you can mount in this department of the Temple of Fame; and the buffet is a gentle hint to move off to some other staircase, where your progress is unimpeded by any such restrictions.

"Wishing you all possible joy of your pair of letters, I remain your affectionate cousin, J. R."

To a young sister George says:—"A great many folks are going to see us capped, especially young ladies, who desire to behold the wonderful powers of the velvet cap,* which by a single touch can transform a thoughtless, foolish, wild, and ill-behaved medical student, into a grave and trustworthy dignified physician, whom mothers and fathers are equally ready to put confidence in. I doubt not, that though you greatly enjoyed your visit to the Shows, and now wish yourself joy of the many acquaintances you made among giants and giantesses, dwarfs and fat boys, people with white hair and strange eyes, and the like, that you would wish, notwithstanding, to be here, so as to attend our capping, and see us give to the winds the empty, foolish, and useless title of Mr. now far beneath our dignity.

"But I must not strive to paint in too glowing colours the delights of sights at home, or you will weary of your present stay in a place where a great many things may be seen, scarcely less interesting than many we have here, some of them much more so. Mr. T——, or one of his sons, will take you, I doubt not, to see the looms, those especially set in motion by steam; in which, to judge from

* For a description of the ceremony of "capping" we may refer our readers to that given by George Wilson in his "Life of Dr. John Reid," pp. 15, 16.

the interest you always took in our after-dinner disquisitions anent guns and engines, and clocks and sun-dials, I believe you will be much interested. Indeed, you should let no opportunity slip of watching the ingenious mechanical contrivances which abound in a city like Paisley, where so many fabrics are woven. I look back with pleasure on the time I spent when I was your age, and for years after that epoch, in becoming acquainted with the construction and purposes of machinery. For I found it *then*, not only an innocent amusement and a profitable occupation of hours spent idly by others; but *now*, when for the latter years of my life my time has been given almost entirely to other things, I have still more felt the value of such occupations of time; for the observation of machinery in motion, the mental struggles before the mode of action is quite understood, the admiration of the ingenuity shown in devising beautiful contrivances to effect desired ends, and still more the endeavour to imitate such or similar mechanical adaptations, develop the imagination and the powers of reflection, it fosters and ripens ingenuity, and all the while exercises on the mind a silent but salutary dominion, which quickens its most useful powers. Do then, try to fathom the mysteries of wheels and cranks, and rods and pinions, and strive to acquaint yourself with the *object for which* the wheels move at all, and then the *means by which* the desired motion is effected."

On the day following the ceremony of "capping," he hastens to share the news with the "dear and only brother," who so fully sympathized with every incident in George's career.

"My last letter was very hurried, ill-arranged, and ill written; the present will be written more leisurely, and will

be the more pleasing to you, as it is likely to contain more that will interest you than the former did. Yesterday, the second of August, I, and a hundred and eighteen more young graduates, were created doctors of medicine. I send you a list of our names, which you will find to contain the cognomens of several of your friends and acquaintances. You will see that Samuel Brown has got one of the medals; he is the most deserving of the whole four who have been thus crowned. The others were all of them above thirty.

"You will see that my Thesis and John Niven's were among the seven given in (by the professors) as worthy of the prize; from these Samuel Brown's and Carpenter's were chosen, and we must be content with the two stars which flourish at our names. I never expected a prize, because I was soon aware that S. B.'s was a more valuable chemical essay than mine, and I knew they would not give two chemical prizes. It is some reward for *our* three days' work, that I was chosen among the few severed from the hundred and nineteen as worthy of special regard. Christison said of my Thesis, that it was 'very ingenious;' this he said to some friend, for he never expressed an opinion to me, and I have no thought of asking him for praise. Hope criticised it in public the day before, very cautiously, without committing himself as to its value, but seasoned it with a wholesome advice about the delicacy of the experiments, and the propriety of their frequent repetition; but I have no thought of taking his advice, as I am quite satisfied with my experiments and my conclusions. I have to thank him, however, for making a groundless objection to one portion, which will induce me to add another portion to my Thesis, so as to take away the last prop of the false theory. It will be published soon, *i.e.* in a month or two, in the volume to be issued by the University Club,

but separate copies will also be printed; in truth, it is a College law, that if a Thesis be printed, so many copies (forty or seventy) must be sent to the University.

"It is not every author who is provided with readers in this way, and spared the necessity of invoking gentle readers and a generous public. I shall probably (for I am restricted as to room in the Club volume) incorporate a portion of the supplement into the text of the Thesis, which I begin to-morrow to remodel, and leave the rest for a separate paper. By publishing my result in two papers, I shall have the first and most important part, perfect as I hope to make it in itself, free from the objections which may be raised against the second, and might thus draw down undeserved condemnation on the first. Samuel, my kind, estimable friend, will probably go to Birmingham; if he does, he will read my essay to them, as I have no thought of going thither."

Thus were the dreams of youthful years to a great extent realized. Steadily upwards had been the course; unflinching diligence and sturdy perseverance surmounting difficulties at which a less courageous spirit would have quailed. In concluding this chapter, however, one thing must not be overlooked; viz., the fact that he passed with so little injury to his moral life through the temptations thickly besetting a medical student's life, and by means of which many who shared with him a brilliant noon-day, have brought an eclipse on their after years, or have sunk in dark and gloomy clouds below the horizon. In later years he felt deeply grateful, and he often expressed wonder, that he had been thus preserved. Much of his safety may be attributed to early training and pleasant home influences; much also to the happy buoyancy of spirit that never forsook him, while the eager craving after knowledge left no room for baser tastes to develop

themselves. But had he been asked to say what shield had proved so efficacious in warding off evil influences, he would doubtless have reminded us of the cradle prayer, for him answered as for Joseph; so that "his bow abode in strength, and the arms of his hands were made strong by the hands of the mighty God of Jacob." "Have not we realized," he said to a sister many years later, "in spite of all our sorrows, and cares, and trials, that we are the children of many prayers?"

CHAPTER V.

WORKING IN HOPE.

"The subtle chymic can divest
And strip the creature naked, till he find
The callow principles within their nest:
There he imparts to them his mind,
Admitted to their bed-chamber, before
They appear trim and drest
To ordinary suitors at the door."

HERBERT.

WHEN the weary climber of Alpine steeps has reached the summit to which his toilsome efforts have long been directed, it is often but to see before him heights still more inaccessible, defying, yet tempting him to scale them. The past is as nothing compared with what is to be accomplished, and only a stout heart and manly purpose will avail. So with the student when the labours of years are crowned with success; the end is but a new beginning, and the goal is harder to be won than in his first career. But happily, all looks bright in the future to youthful eyes, and hope gives strength to do what to faint hearts would be impossible.

In the 'Life' of Dr. Reid we find George Wilson's own experience of this time:—"There are few periods," he says, "more happy in a young doctor's life than those which immediately succeed his graduation. The most diligent

student is thankful to escape from the irksomeness of a round of college, hospital, or dispensary duties, which occupy nearly the whole day, during an almost unbroken session of ten months. It can rarely happen that each of the sciences which occupy the attention of the medical student is equally interesting to him, and there must always, in a large school of medicine, be some teachers who, more or less, try the patience of their reluctant listeners. A natural reaction, also, from the exhaustion of protracted study, and the suspense and anxiety which even in the best prepared, the boldest, and the most hopeful pupils, attend the anticipation of the dreaded ordeal of examination, arrays the future in rainbow colours." The necessity, however, of making his way in the world permitted no rest on the summit of this Hill Difficulty, but compelled him to scan the horizon in search of some field for his exertions. The day after graduation, he tells Daniel of various openings in prospect, such as a promise of lecturing in the approaching winter to a provincial association at St. Andrews, an offer made to the Secretary of the Board of Arts and Manufactures to teach chemistry to the young artists, and an invitation to lecture at the School of Arts, Haddington. These schemes all proved visionary, but, "for the sake of practice, and to be doing something," he hopes to appear as a lecturer on some provincial arena in winter.

Towards the close of the month, George, in accomplishment of a cherished desire, attended the meeting of the British Association for the Advancement of Science, held that year in Birmingham. His friend and fellow-graduate, Samuel Brown, accompanied him. He had the good fortune, on his arrival, to be introduced to the well-known philanthropist, Mr. Joseph Sturge, and resided under his hospitable roof during his stay there.

In writing home, particulars are given of the appearance of the two friends at the Chemical Section:—"We were received as courteously as we could have wished, and attended to with interest and patience. You know that I spent my time up to the last moment of leaving, in writing out an abstract of my Thesis for the Association; but, after reaching Birmingham, we found that long papers were in bad odour, and they admitted so many ladies to the section meetings, that we gave up the idea of reading, and resolved to speak our papers to the people. This idea was only formed the night before, and I had no time to arrange my thoughts; but we were fortunately driven desperate, and so achieved wonders. Our names were read out last, the day before we were appointed to read; accordingly, Samuel and I were sitting together after the section had begun, talking about our matters, when in came Playfair bounce from the section to say that my name had been read out, and they were waiting for me. Away I ran, and before I very well knew where I was, I was mounted on a rostrum before some hundred strangers. Though somewhat flurried at first, I speedly acquired courage and coolness enough to progress satisfactorily, in which comfortable progression I was greatly aided by the attentive, watchful looks of some of the more intelligent among them. When I came down, Playfair said I had done 'nobly.' If I were not writing for a fond mother's eye, I should be ashamed to say all this; but I know you will be anxious to know everything about this journey. Professor Graham, Dr. R. D. Thomson, the Birminghan secretary, and Professor Clark of Aberdeen, all expressed their interest in the paper, and their satisfaction with its proofs. We both of us intended to have read or spoken before them other communications, but business increased on our hands (that is section business), and we

could not obtain an opportunity of addressing them a second time."

It was at this meeting that the difficulty experienced by the younger scientific men in gaining the access they desired to the society of those whose fame was already established, together with the expense of hotel charges, led to their dining together daily at a small tavern where Edward Forbes had established himself. The tavern happened to be named the "Red Lion," and so pleasant was this arrangement found to be, that, before leaving Birmingham, it was decided that at every future meeting of the British Association, there should be a Red Lion dinner. At this dinner George Wilson never failed to be present when it was in his power, though with the club afterwards formed in London, and bearing the same name, he had no connexion.

From Birmingham, George went to pay a short visit to his brother, not without a faint hope that in the great metropolis a sphere might be found for his energies, leading to advancement for the future. "Now for London," is the close of his first letter after reaching it; "it is the old place, as noisy and as busy as ever: its streets crowded, as when I left it, with handsome men and beautiful women, and idlers like me, and busy people like Daniel, and fools like ——, but I'll not say who. I wonder to find it so little changed, forgetting that I have only been four months absent." Daniel reports of him :—"George is certainly very much improved; his successful passing, and all other agreeable circumstances, have combined to produce perfect health and excellent spirits. He came upon me without the previous notice he had promised to give, and startled and delighted me with his company. I hope his visit will be productive of good in every way, and that you will get him home in very, very different health and spirits from those in

which he returned after the very uncomfortable winter we shared together before."

During the three weeks of this visit the brothers spent as much as possible of the time together, George going out "only to look after something to do, striving to get wriggled into some corner, however small, with the hopes of getting a bigger hole thereafter."

Having learned at Birmingham that a college of civil engineers was about to be formed in London, he made inquiries about it, but found it offered no post suitable for him. Other attempts fared no better. Wandering for three days in search of Professor Daniel of King's College, to whom he had an introduction, was at last repaid by the pleasure of a warm and courteous reception. The long desired introduction to Faraday was also enjoyed, and of a visit by appointment to him George says,—"Faraday was very kind; showed me his whole laboratory with labours going on, and talked frankly and kindly; but to the usual question of something to do, gave the usual round O answer, and treated me to a just, but not very cheering animadversion on the Government of this country, which, unlike that of every other civilized country, will give no help to scientific inquiry, and will afford no aid or means of study for young chemists; all my efforts, therefore, have been unsuccessful. This Fog-Babylon will have none of me, casts me out of her bosom and drives me home again; so I am not only attracted to you by ties innumerable, but I am impelled towards you by repulsions innumerable, and with the best grace I can put on the matter, will be quickly back among you."

In the close of October, after alluding to troubles pressing heavily on the family circle, in reference to which he says,—

"We are men, and will strive to look things in the face; to bear is to conquer our fate," he goes on to tell Daniel of his immediate plans and prospects: "I am sure you will approve of my continuing to study this winter, on the plea of better fitting myself thereby for fruitful work. You may be certain I have convinced myself of this before I thought of classes. Further, you know that I have striven to get a situation and have failed, and at present I would gladly take one could I get it. Limiting that gladness, however, by two conditions, the one that it should not take me from Edinburgh, for the sake of Mary, who is still in a very precarious state of health, and, now that Catherine and B. are gone, has no friend near her with whom to commune; the other, that it should be worth taking, in the sense of leading to something better, for it would be folly for me to take a post which should be trifling, and by consuming my time, prevent me from qualifying myself for another and a better. But I may perhaps get some Saturday lecturing in the provincial towns about. This I intend, if possible, to obtain.

"Meanwhile, I have been working at mathematics and algebra, attending a class, and making some progress; in mathematics getting on sufficiently well, but a good deal stumbled in algebra by my sheer ignorance of common arithmetic. But being engaged at home in the revision of that, I look to quickly making up all lee-way, and succeeding in algebraic computation fully. . . . I shall have little time for letters this winter, and only on *short paper*."

Notwithstanding this prudent warning, a letter on foolscap was not long in following, with no lack of interesting information, and fun in addition; we give an extract from it.

"I think you will be pleased with the consideration of

'The Desire of Fame;'* but of this more hereafter, when I send you the paper itself. Besides the Snowdrop verses (which I shall send to you by the first parcel), those on 'The Skull,' 'A Song on the Seasons,' and 'Chalybeate Rhymes' for Miss S.'s birthday, I have written a Song to the Ibis on its landing in Egypt, which I hope to recover from its present darkness, it having gone mysteriously amissing. I shall also, at some early period, send you the 'Sleep of the Hyacinth,' which I shall next labour at. But in the meanwhile, I have forsworn all rhyming, and in proof thereof have issued the following advertisement:—

"'(Sign of the Winged Ass.)

"'George Wilson returns thanks to his friends and the public in general for the encouragement he has received since he began the rhyming business on his own account; at the same time he takes this opportunity of informing them that he has just returned from a professional tour to the cities of London, Birmingham, and Penicuick, from which he has brought a large stock of new ideas, so that he is prepared to execute orders to any amount. Every article sent from the house of G. W. guaranteed perfect, and warranted to jingle well. The strictest attention paid to points and commas; likewise to morality and grammar.

"'At the same time G. W. thinks it proper to inform his friends that he is about entirely to abandon the rhyming line, and open *premises* in logic and mathematics; so that an early application will be necessary to prevent disappointment.

"'In consequence of retiring from business, G. W. has on hand a large stock of love-letters, consisting of proposals,

* An Essay, read at the Physical Society.

refusals, acceptances, and *juste milieu*, milk-and-water epistles, written in the most approved style, which will be sold in lots to suit intending purchasers. At the same time, a quantity of acrostics, including Christian and surname, odes to love-locks, and sonnets to mistresses' eyebrows, will be disposed of at reduced prices.

"'Country orders punctually attended to.
"'No connexion with any other house.

"'Hill of Parnassus, Highest Cliff,
"'1400th Olympiad.'

"They have sent me the red ribbon, and so constituted me one of the friends of the Brotherhood of Truth. The ribbon * I now wear, to the great wonderment and offence of many of my well-wishers, who see damage to my character from any connexion with the dubious persons composing it; but my character does not hang on a ribbon, and when I called on Forbes, he spoke to me in the kindest manner, explained the helping, unselfish character of the Society, its freedom from forms and vices; and wound it up by offering and promising to do everything to help me, especially towards getting a lectureship in the provincial towns, perhaps Liverpool. At present there are unions in France, Germany, England, and India, so that the craft thrives. Some of the best fellows about College are in it, to know whom were reward enough.

"Mary sends you her kindest love. She is not better, I am sorry to say, but confined to bed a large portion of the day. I fear you will come home to a sad household; but

* This ribbon had interwoven in its texture, the letters O. E. M. those being the initials of its motto, **ΟΙΝΟΣ, ΕΡΩΣ, ΜΑΘΗΣΙΣ,** and was worn across the breast.

we will hope the best, and we shall all be very glad to see you."

The brotherhood referred to in this letter was an object of deep interest to George Wilson, and exercised an influence over him so beneficial in many respects, that we cannot pass it over without notice. It arose out of an association of students who edited a weekly magazine, called the *Maga*. Various records of its commencement exist among the private papers of the Society. In an address to its members, by the chief office-bearer in 1838, its formation is thus mentioned :—"Established by a few congenial souls to commune together, it was first called the Maga Club; its objects were literature and good fellowship. The principles which regulated it, however, were so excellent that many craved an admittance into it, and its objects became enlarged, its aim more pretending; from a club it rose to a brotherhood,—a brotherhood devoted to the search of truth in every department of knowledge." The name by which the members made themselves known was "The Universal Brotherhood of the Friends of Truth."

To help each other in the search after truth was their avowed object, and so wide-embracing were its desires as to aim at "becoming a mental and moral safeguard to the world, and a bond of union among all nations." As its original founders were men whose talents gave them a high place in the Edinburgh University, entrance to their circle was eagerly desired by their fellow-students. Before long, branches were formed elsewhere, and many who have since distinguished themselves in various departments of science, were amongst the early members. One proof that amongst them were young men of promise may be found in the fact that six of them have been chosen to fill chairs in the

University in which they were students; while elsewhere the brethren have not less distinguished themselves. The Society is now only a thing of the past, but during the years of its existence, it was helpful to many, and to none more than to George Wilson, who was cheered onwards by the sympathy and friendliness of its members; quickened to diligence in scientific research; and refreshed by many a pleasant hour of social intercourse.

The comparative leisure of this winter permitted George to cultivate the society of a few choice friends. In addition to those already named as on intimate terms, there were John Goodsir, George Day, now of St. Andrews, David Skae (Dr. Skae, Morningside, Edinburgh), Edward Forbes, and one or two more, with whom much joyous and profitable fellowship was maintained. His cousin, James Russell, was now attending College, and through his introduction a valuable acquisition was gained to the circle of friends. A student—a year or two James Russell's senior, first known to him as a competitor in the Humanity Class of 1837–8—had become his almost daily companion; and the introduction of John Cairns (the Rev. Dr. Cairns, Berwick) to the rest of the family circle was welcomed with pleasure by each of its members. In the subsequent years to fall under our notice it will be seen how powerfully intercourse with their common friend influenced the character of the two cousins.

In November George tells his brother that—"The having a winter of peaceful study is a great boon, which would atone for many discomforts. And as I continue to make progress, slowly, yet surely, in what I am studying, I am quite contented and happy. The Introductory Discourse [that on the Desire of Fame] is making the round of a few friends here of both sexes, so that I cannot send it at this

time, but it shall be despatched very soon. Meanwhile, besides praise from many quarters, it has procured me the Presidentship of the Physical Society. There are four presidents; I am the third. I was equal in votes with the second, and above the fourth, an older member. In truth, as I was almost the youngest member, and received the chair without request or canvassing in the least, altogether unexpectedly, I value the honour, and I expect to derive from my place many benefits in my prosecution of science. In virtue of my office, which is no sinecure, I have got the pleasant task of drawing up a report of the recent progress of chemistry and geology, besides inaugural addresses and such like. As the Physical is a Royal Chartered Society, including an elder and a superior class of students, and as it reports its Transactions in the public newspapers, there is more good to be gained from it than from any other of the junior societies.*

In the beginning of the year 1840 a bright spot becomes visible in the horizon. "Two days ago I heard from a young friend that Dr. D. B. Reid, the chemist, is to leave Edinburgh for London at the end of this winter. This has set me seriously thinking about beginning to teach chemistry

* The work of this session comprised six papers read to the Royal Physical Society on the following subjects:—"The Motives which prompt to the Study of Science;" "The Photogenic Decomposition of Water by Chlorine, Bromine, and Iodine;" "The value of Balard's Hypochlorous Acid as a Bleaching Agent;" "Report on the Progress of Chemistry, in Two Parts—Part I. On its recent Application to the Arts; Part II. On its Recent Application to the Production of Light for Economical Purposes;" "On the Decomposing Powers of Hydrogen as a Metal, and its Relations to the Constitution of Haloid Salts;" "On the Solution of Gases in Water, and its Relation to Pneumatic Inquiries."

To the Royal Medical Society he also read a paper on the "Non-electric Character of the Light of the *Pennatula Phosphorea*."

here next winter. Many friends urge me to it, and if I had the capital I would risk my reputation on it." About a week later he writes to Daniel,—"Do you remember my poor old friend the sweep? He is dead—fell from a ladder and hurt his side. His case was neglected, and when he sent for me he was past remedy. I sent him to the Infirmary, where he lived only two days. He was buried on Christmas day. I sold my Koran to buy him a coffin." This poor man was one of the Infirmary patients in whom George had become interested while attending the hospital. Since then he had received help in many ways, being considered a pensioner of the house, his broken health unfitting him for active labour. No small amount of self-denial was shown in parting with his beautifully-bound and much-prized Koran to afford his poor friend decent burial. The same letter says:—"I have had an oppressive bilious attack for the last month, which has damped my energy and kept me very quiet, circumstances not being of a kind to give one the elasticity with which to meet depression. I am getting well again, and Mary is a good deal better. Mother is pretty well, and otherwise we are as we were. They talk of writing to you by this penny post, and they certainly will soon. Meanwhile we are all glad of this reduction in postage. . . . I have now made up my mind to begin lecturing next winter in Edinburgh. In the meantime I have learned that I shall not require to take out a fellowship, but only a licence, which may be had for the asking. Dr. D. B. Reid will certainly go to London, and his brother come here to lecture for him, but there will still be a vacancy, which I shall strive to fill. All my friends urge me on, and I see no opportunity so promising. . . . Dr. Reid's brother will have his fine rooms, and I cannot vie with him as a teacher of *practical* chemistry, but as a lecturer I may."

"I am now (February 13th) spending most of my time in working for my lectures, not forgetting, however, mathematics and German, in both of which I make satisfactory progress. Well, we must hope that the future will belie the past, and bring us the freedom from corroding anxiety which we have never yet known. What a moral lesson I am teaching you! Meanwhile our hearts will not burn the less warmly than they would do if gold were ours to command. In proof whereof I shall give an example of my benevolence. While I was reading away at electricity I heard the sound of a flute on the steps, and thereafter the voice of an Irishman singing. I went to the door to give him a penny, and found a poor, but happy-like blind man, who, taking the coin as his due, accosted me, 'Och, yer honor, and couldn't ye spare a bit ould hat, for mine was druv off by the wind when I was playing yesterday in the Kirkcaldy boat, and they wouldn't wait for me, nor for yer honor naither.' Pitying the poor bare-headed man, I tried to get hold of some other body's hat, and failing, gave him my own old one. My four-and-sixpenny gossamer must do night as well as day-work now, thanks to the blind Irishman."

As letters in the two following months are the only sources of information, we give several to his brother almost entire.

"*April* 28.

"I am writing on the evening of a day about which you will have ceased to think in England; that is, the day misnamed Fast-day, because the slowest in the year. The dull, sepulchral clanging of the bells, and the silence of the street, made the day dull, and the exceedingly sunny brightness of the air drew me forth from my books. I wandered down to the sea-shore near Granton, and loitered along the verge of the sea, singing and picking up shells and sea-

weeds, and now and then a strange stone, with which I loaded my hat and pockets. There, among strange crab-fish, and cuttle-fish, and creeping things, what should I find thrown by the waves at my feet, but a little round leather play-ball. The question arises, whence came it? It was small enough to suit the delicate fingers of the most fragile mermaid or sea-nymph, who may have tossed it in excess of glee too far, so that it came to the surface of the great water. I had been amusing myself skimming oyster-shells in duck-and-drake fashion over the surface of the water—this being a great occupation of mine at the sea-side. Mayhap this pleased the sea ladies, and they responded by sending me the ball. Who knows? The voice of the waters spoke in full diapason tone, some stout hand being at the bellows. And doth not St. Paul say, 'That every voice in nature has a significance?' Doubtless, but our closed ears understand it as little as the music of the spheres. It may have been that some too frolicsome nymph broke one of the mother-of-pearl panes of Neptune's sitting-room with the misdirected ball, whereupon the angry god, snatching the offending missile, hurled it with his mighty arm sheer through the opposing waters, to perpetuate its future assaults on brother Pluto's round earth (as Jove tossed grim Mulciber over the crystal battlement). Whether or no, it has led me, in vain attempt to trace its parabolic and altogether hyperbolic course over earth and sea, far away from my object in snatching my pen to write gravely to my grave brother. Wait a bit, the gravity is coming.

"James has got a prize from Sir W. Hamilton for translation, but otherwise has not done much this winter. I am as before; but now done with classes. Dr. Kombst, who has highly eulogized my progress in German, especially my quickness in learning to speak (after a fashion)! has sent

me a perpetual ticket to his lectures and classes, so that I may take my own time of attending. . . .

"Forbes and I have visited some class-rooms, and will look over more before fixing. . . . I have many kind friends here, and keep a good heart in me."

"*Wednesday, May* 1840.

"I shall just write you here a desperately swift letter, having too few of the commas and stops that stand in the way of composition. I would I were beside you in your busy work, I think I could help you more (indirectly) than some better-hearted people. Whenever you come, we shall be glad to have you, and I can tell you that you will find your old friends as loving as before; and I can promise you some desirable new ones. Although you are so very busy, I am going to introduce to you by letter a gentleman leaving this for a short stay in London, Edward Forbes, the celebrated editor of the 'Maga,' a real good-hearted, clever fellow, and one I am sure you will like. He was a painter before he took to natural history, and is still a fine sketcher; he has seen your work, spoke of it in very high (but honest) terms, and wished to know you. He is about twenty-five years old, and now destined for a scientific career.

"He is a very amiable, obliging fellow; at the same time exceedingly well read in all sorts of books, and fond of literature. I need not tell you he is a wit, or a good song writer; but you may not know that, spite of all the quips and cranks that gave the 'Maga' so much interest, he is a fellow of great good sense, and fine taste as to literary or artistic merit. Indeed, I do not know among my friends any one on whose judgment I would put more reliance in any disputed matter.

"I hope you will like him; I am sure you have a great deal in common, and you may find him a pleasant and useful companion. We want to give you the red ribbon, as soon as your paper is done; it was he proposed you.

* * * * * *

I'll give Forbes a letter to you; he knows how busy you are, and will not waste your time.

"I have been seeking for a room to lecture in all over the town, but have not yet found one, and am induced to delay, as there is some prospect of a better room turning up than any yet proposed to me. One trump card has turned up among the many blanks that have been coming to my share, with a goodly set of knave cards too among them. This is Christison letting me work in his laboratory. I shall thus get something ready for the Association at Glasgow this autumn. You must get your visit over by the end of August at least, as I am engaged for September there.

"I have not heard from Daniel since I wrote to you," he tells his sister a few days later. "I got letter after letter from him the week before, concerning a chemical lectureship in one of the small London schools, which was offered by its proprietors. Daniel would have liked to get me up beside him, and made out a fine picture of the advantages of the place. But I saw from the first that it was a shabby affair, both in respectability and pecuniary value, and all my friends here advised me to have nothing to do with it. I suspect, however, I got the credit among the London folks of being knit to Edinburgh by stronger ties than professional *esprit*. Daniel Macmillan sent me a letter to-day, in which he refers, with evident surprise, to my refusing a London lectureship, and puts the query, if the great attraction here be not a heroine? Marry! they will have me

entangled in some love scrape or other to give a colour of rationality to their own fancies; and Daniel, though saying nothing, has, I daresay, had a laugh with his namesake at my sudden conviction of the great advantages of a residence in Edinburgh. Nevertheless, in spite of these sly insinuations, you know and I know, that the 'Virgin Chemia,' as certain of the old alchemists call her, is my only love and object of worship. Her ladyship may be adored in a very quiet way; a little expense for glasses is all (and does not every lady need her glasses—tumblers, spectacles, mirrors, and so forth?) Flesh-and-blood ladies need on the part of their adorers lots of wealth and wisdom, and my share of both is so very slender, that I must tarry a long while before I get the right to address them."

To the lectureship spoken of the following letter chiefly refers:—

"*21st May*, 1840.

"My Dear Daniel,—I know not what to say to you in return for your great trouble in looking after this vacant place for me, and if thanks were things to be sent between brothers, I should make my letter so heavy with them, that it would need two or three of Mulready's nonsensical envelopes, stuck all over with her Majesty's penny heads, to get it through the Post-office. As it is, however, I fear the place is not worth my taking, even in its best view. The School must be a very small and humble one, for I never heard of its competition with University College, all last winter; and no exertions on my part could make much difference on the small income it must yield its chemist. I never heard of Mr. —— ——, B.A., nor do the Cambridge men here know about him. As to Mr. —— going to the College of Engineers, he can only be going as

Assistant, for Everett, formerly of Middlesex Hospital, is the chemist of that institution. I could have stood with the best chance of —— 's place, for I knew of it when inquiring about the Engineer's College last autumn, but I did not think it worth my while.

"The London students are notoriously the most unscientific students on the face of the earth. My English friends need not take offence at this, for the Englishmen who come here are abundantly characterized by scientific enthusiasm; but the professional business spirit of the London schools is alien to the true study of their subjects, and on such things as chemistry they only ask what will pass the halls. I had full opportunity of seeing this, last winter, in the practical class of Griffith of St. Bartholomew's Hospital. An experienced and popular teacher told me it was useless to discuss law or theory before them; they did not care for it. Although, therefore, last winter I would gladly have caught at what you have indicated, I should be loath now to land myself among strangers, in a place where my love of science would be damped down by the want of enthusiasm in my pupils, and my pecuniary income would at the best be barely sufficient to keep life in. Further, I should not like to come in opposition to Graham, as a rival teacher. I have spoken to Forbes and other wise men, and they dissuade me from it. And now, indeed, there is an opening in Edinburgh such as will not soon occur again; I have the kindest assistance from all about me, even from those I thought coldly inclined towards me. I have the good-will of all the professors, I may say, and the promise of their votes (those who have them), when I apply to the College of Surgeons for licence. All the University men are on my side, and all the influential Queen's College men. Both Dr. and Mr. Lizars have promised to help me, and

recommend pupils, and I am pretty certain of getting the Cambridge men, one and all. All the red ribbons, of course, stand by me, and many private friends (ladies especially) are beating about for pupils.

"In these circumstances, I reconcile myself to the additional expense in beginning here (though I am certain Lucas underrates the London prices), because I am sure I should have just to do in a few years what I am doing now, and with no greater, but in truth with fewer advantages. London is not the place for me at present; Edinburgh is better; this has been impressed on me by Samuel Brown, Forbes, Professor Syme, Young, and others, long ago, before this matter turned up, and I should prefer remaining here to going anywhere else for some time.

"I mourn to think how your precious time has been taken up about this: and along with this I see with sorrow how little likely it is that you and I will get together for a long while; but the same professional necessity that took you to London will keep me here, and for a while we must 'dree our weird' separately.

"I have in hand at present a very interesting inquiry regarding the phosphorescence of sea animals, and its possible connexion with electricity. It was begun at Forbes's request, and is likely to yield an excellent paper for the British Association. I work some hours a day at purely chemical labour at Christison's, and hope to get something in that way ready also; so that I shall probably read papers at two different sections.

"Regarding the Brotherhood, there is no secrecy as to its character, but the opposite, enjoined on all men. Nevertheless I never talk of it before people, for they cannot be got to understand its true character. I advise you to do the same."

"*26th May*, 1840.

"The bearer of this letter is Mr. Edward Forbes, triangle-bearer, painter, song-writer, naturalist, and I know not how many other excellent and admirable things besides. He is at present in London, to superintend the printing of his book on the star-fish, and will stay some time there. As I have told you concerning his talents and amiability before, I shall leave you to discover his merits yourself, and close this introductory portion of my letter; the rest you can read at another time.

". . . . For my part, I expect to be married about the year of our Lord 1860; all thought of the ceremony being celebrated sooner has clean gone out of my mind for a long while back, and I have banished all love ideas. It is different, however, with you; and I hope sincerely to see you soon, as that wild, strange, powerful man, the author of the Chartist Epic, says, finding 'expectation substanced into bliss.' With every fond wish for your happiness, I conclude here, for I have got strange beasts to analyse, sent me from the sea-caves of Fife, and they are beginning to decay. Hoping you have not kept Edward Forbes waiting all this time, I remain your affectionate brother, "GEORGE."

The allusions towards the close of this letter are in consequence of Daniel's approaching marriage.

"*June* 6, 1840.

"I work steadily at my lectures, writing and reading often for eight or ten hours a day. I find that the undertaking is a more serious one than it seemed at first. But I don't flinch, and hope to get on bravely."

"*July* 18.

"I shall write you at present a very short letter, for I have not much to say, and am not in the humour for saying

that little same. The weather here has been of the worst, —rain, rain, such an eternal shower-bath of rain that no Murphy would have dared to foretell it had he possessed the power to foresee it. *If* he had chalked out such an umbrella July, he would have been seized by the enraged people, and burned alive,—roasted, as all unboiled murphies should be. In consequence, I have never got out to walk, and the excess of vapours without has begotten dyspeptic, blue-devil vapours within, of which I have not yet got a clear riddance, though a clamber up Arthur Seat with Professor Blackie has expelled most, and given notice of leave to all of them."

The next letter speaks of a pedestrian excursion in prospect, in which George was to have his cousin James as companion. How this plan was carried out, and what were its effects, succeeding chapters will show.

"*September 5th.*

"I was away at the country when your letter arrived, having gone for two days to Penicuik with John Niven, and since I came back I have been making preparations for setting off to Stirling to-day, if possible. The weather, however, is at present very stormy, and unless it improve I shall not leave till to-morrow. I intend to walk about the country there for a few days, and then set off for Glasgow, when the Association meets. I shall return as soon as the Meeting is over.

"I go to the country without much desire to be there, I have so much to do; but I feel the need of some relaxation, and it will gain time in the end. I have nothing to tell about almost anything. . . . I have not yet written to Glasgow, but they know my intention of coming. I shall be there a week, and leave the moment the business is over.

Meanwhile the sun has come out, and it prompts me to pack up. I'll write to you either from Glasgow, or as soon as I return."

With this glimpse of sunlight we close the chapter, having before us many days like those St. Paul speaks of, in which neither sun nor stars appeared.

CHAPTER VI.

LOSS OF HEALTH—PUBLIC LECTURES ON CHEMISTRY—INVALID LIFE.

"As many as I love, I rebuke and chasten."

MERCIFULLY is the future hidden from human eyes, else would the few days of country life by which George Wilson expected to "gain time in the end" have been very differently anticipated. It may be that compassionating angels watched with wistful eyes his departure from home, but love infinitely more deep and tender than theirs was even now preparing the furnace, by means of which the process of refinement was to be carried on.

Stirling was the head-quarters of the cousins in their pedestrian tour, a much-valued friend being their hostess there. On the 10th of September he writes home, "I should have written yesterday had I not been away up in the country, spending the night in a farm among the highland moors, about eight miles above Stirling. Hitherto things have gone on most excellently in all respects; Mrs. M.'s children being in the country, she has devoted her whole attention to making us happy, and we have received every kindness from her. A brief record of what we have been doing will best show you how we have been occupied, and prove to you that we have not misspent our time. Saturday was devoted to a nine miles' walk over the carse

of Stirling to Bannockburn, to the sight of the stone where Bruce's standard was placed on the day of battle. With the help of two gentlemen, I got a somewhat good idea of the forces in the affair.

"Then on Sunday, after hearing two tremendously long sermons in the Established Kirk, it was proposed to walk out to the Bridge of Allan in the evening, and hear a third discourse. We walked out, but as the sermon was in a wright's shed which was crammed, James and I walked farther to learn if there was evening service in the parish church of Lecropt, a beautiful place on the Perth road. Singularly enough, there was no sermon, and we had to occupy ourselves admiring and asking questions of the myriads of bonnie bairns we saw about us. Of these there were so many that I can conscientiously say that Stirling and Perthshire beat all places hollow for beautiful children, and as sharp as beautiful. . . . I am out every day walking till nine o'clock. I tried last night to finish this letter, but this is all the length I got. This morning I add that I was away on Monday walking to Doune, which with the return makes a distance of sixteen miles. Tuesday, as I have said, we spent at a farm seven miles off, and now we are just starting for a twenty miles' walk into Perthshire. We shall rest there a day, and come back on Saturday. I leave this on Tuesday at the furthest, so that time presses, and as the period is less than I thought it would have been, I am anxious to make the most of it."

"STIRLING, *Saturday, September* 12, 1840.

"MY DEAR MOTHER,—I promised to write to you, when I returned from our Perthshire excursion; I have just come back from our twenty miles' walk, and sit down to send you a few lines, but as I have been a good deal knocked about,

and have a very bad pen, you will excuse the scrawl I send you. On Thursday, James and I set off for Balloch, a farm in Perthshire, about three miles from Muthil, where Mrs. M.'s children are staying with their aunt. It was a very wild day, the rain falling almost incessantly, but as there was no help for it, we buttoned our surtouts about us, and, staff in hand, set off, Mrs. M. accompanying us four miles out of town. As we passed through the Bridge of Allan, I was surprised by some one tapping at the glass of a window, and looking round I recognised John Niven's goodly countenance. I stayed a few minutes with them, and set off again, leaving Mrs. M. a little past the Bridge of Allan. We trudged on manfully, through rain and wind, walking four miles an hour without flinching for the first thirteen miles. In this *we* were greatly assisted by a small drop of brandy which our kind hostess insisted on our taking; and *I* by the fact that James was carrying out a quantity of tobacco to Jean Scott [an old servant of the Russells]. As it was not at all unlikely that the tobacco had been smuggled, I exacted a tax on it, in the shape of a few inches off the pigtail, and getting a light at the cottages we passed on the road, I kept up my steam bravely. After reaching the thirteenth milestone we stopped at an inn at Ardoch, and as it was threatening a very heavy shower, we waited and refreshed ourselves for nearly an hour. Thereafter all went wrong. We left the turnpike road to take a short cut by an old road over the moors. We got directions how to proceed at the tollgate, and James, who professed to know the country, learned the route from the man. But, alas! his memory failed him at the critical place; and after we had proceeded about two miles we came to a place where two roads crossed, leaving us three routes to choose among. No effort of remembrance could enable either of us to recollect the right

way; and after reproaching James, we agreed to take what turned out to be by far the longest road, by at least three miles. There was no house or person near to ask at, and we had the mortification this morning to find that, had we asked at the first farm-house we came to after our dilemma, we might have got across a field into the right road, and saved our legs a weary stretch; as it was, we wandered through fields and over farms, and at last reached our destination, having been on the road from eleven till six o'clock. We were most warmly welcomed at a beautiful farm-house; got a most hearty dinner-tea, and, as the folks had not seen candles for several months, after a dose of the everlasting toddy, we got off to bed at nine o'clock. Here, however, our troubles did not end, for though they swore that the bed had once held two Stirling bailies, we found it too small for us. The whole night was spent in a battle between us and the bed-clothes; the clothes determined to be down on the floor, and we as determined to have them lying on us. I am sure I awoke a dozen times, it being my office as occupant of the front of the bed to pull the sheets and blankets up, and James instinctively gave a grunt, and pulled them over to his side. I slept little, but as we lay nearly twelve hours in bed, we were quite refreshed and nimble next morning, though we did not know what *lee* to tell, when we were asked whether we had slept soundly or not. Last night was a repetition of the same manœuvre, but as we employed ourselves speculating on the way in which two famously fat bailies had lain there, the time passed away pleasantly enough. My pen wearies to be done, ashamed of its performance, else would I tell you how we went to Muthil, and visited R. T., and how we saw old Jean Scott, and I smoked a pipe with the ancient, witch-like, doited body, and how in the evening we took tea with

Minister Walker. This morning we walked home again in a bright beautiful sunny day, and did not lose our way. We looked in at Mr. Abernethy at the Bridge of Allan, and as he was at dinner, he insisted on our staying, which we did."

The troubles of this excursion were increased by James Russell, with characteristic heedlessness, having left home with shoes so worn, that it was found necessary to have a pair made by a country workman. These, being strong and heavy, so blistered his feet that he was thankful to take them off, and limp along shoeless in the quiet roads. The result of the unwonted exertion to George was a sprain, which might have yielded readily to simple appliances; but a dislike to give trouble, combined with a child-like forgetfulness of pain not immediately pressing, led to concealment from his kind hostess that he had suffered aught. It was a cloud no bigger than a man's hand, yet it was to darken all his life. Passing over the same ground fifteen years later, he spoke almost shudderingly to a sister of this walk and all it recalled to mind.

Three days later than the letter just given, he went to Glasgow, to attend the meeting of the British Association. A week of exertion and excitement, almost inseparable from such assemblies, caused further injury to health, and he returned home seriously ill. His friend, Dr. Skae, was his medical attendant; and now began that deep debt of obligation which his friends of the medical profession laid him under throughout the rest of his life. Their aid was in most cases given unasked, prompted by a loving regard, and with the tenderness of brothers did more than one watch the ebb and flow of his strength, prolonging by affectionate care the years of his earthly sojourn.

A letter to Daniel, of October 2d, speaks of his health:—

"I shall not apologise for taking a small sheet in answer to

your kind, candid letter of this morning, for I am still an invalid. I have been confined to bed all day for the last week, and have to look forward to an imprisonment to the house, at least for the next fortnight. Leeching and poulticing were of no avail, and the end was an abscess, which was opened two days ago, leaving a gash more than an inch long to heal up before I am sound on my pins again. If I could have looked to the thing in the country, I might have prevented all this, but that was impossible; and my hurried departure, the very day the Association was over, I feared might be thought a sign of extravagant anxiety to be home again. . . . And now I must finish this scrawl, and get back to bed, and try to get better in time for your coming."

It was while laid aside by this illness that his first course of lectures was arranged, under many disadvantages. He had received licence as a lecturer on chemistry from the Royal College of Surgeons,—a privilege at first confined to the Fellows of the Royal Colleges of Surgeons and Physicians, but afterwards granted by them to others qualified to teach natural philosophy and chemistry. George Wilson was their first lecturer on chemistry, and his tickets qualified for their diplomas, though not for that of the University. For the field of teaching thus opened to him he was ever deeply grateful, as, nameless and with little influence, no other opening could have offered similar advantages. The title given to the teachers of medicine not professors is, "Extra Academical Medical School," and of this body he now formed one. After a time, the students of those extra-mural classes were permitted to share the rights of the University students in competing for degrees. The several schools had united under the name of "Queen's College," and with that in Brown Square he became

associated, sharing the lecture-room with other teachers, and having a small laboratory fitted up. After this Association was dissolved two years later, he retained sole possession of the house they occupied, and did not leave it till twelve years afterwards. It was within a few minutes' walk of the University, and was thus easy of access to students attending other classes.

Scarcely convalescent, he entered on the laborious duties of an opening session with the ardour characteristic of all his actions. To spare himself, when professional duty was concerned, was for him an impossibility. A letter to his brother, after the first month was over, gives a glimpse at his labours and prospects :—

"*December 6th, Sunday.*

"Nothing but the most overwhelming occupation of my time, to an extent I never knew before, has kept me so long from writing to you. For the last fortnight I have not had a moment to give to anything but my lectures. I have lectured *six* days every week, besides teaching a practical class and instructing private pupils. This excess of labour has compelled me to sit up every night till two o'clock, and rise at seven; and so tired am I when I come home at four o'clock, that I often fall asleep on the sofa while dinner is being served.

"The worst is over now, and I shall have more leisure for some time to come; but till my class had been fairly begun, I had not one moment of repose. I have now some thirty-one pupils, a most unexpected and cheering number, and I am, of course, most anxious to keep up the good opinion they entertain of me. Many of them are older and wiser than myself. I have no fewer than four Cambridge men fresh from their college, besides prize mathematicians

from our own University, and other shrewd fellows who have sharp eyes to blunders, and could quickly detect them in my present subject of Heat, which they have all studied more or less before. I have, however, given supplementary Saturday lectures, that I might bring before them new doctrines never taught here, at least in chemistry classes.

"In my week-day ordinary discourses, for the sake of my youngest pupils, I have made everything as simple as possible. One of my pupils, however, came up one day to inform me I was making things *too simple* (!); as it were, wasting my students' time, 'gilding refined gold.' I said to him at the time, that if he would wait till the examinations began, he would see whether or not I had simplified too much, determined to give him if he came, a knock-down question. However, last week we were on a subject difficult enough in its simplest form; and the crestfallen genius announced to me mournfully that he could not follow one word of what I had been saying. I laughed, and told him never to mind. *He* is settled.

"I shall only add further about myself, that I have just got out of bed, having been sleeping there after the excessive labour of last week. It was knocking me up, and my wound, after healing, opened afresh and began to inflame: to prevent the serious results that might follow I rested yesterday and all to-day. And I shall have much more leisure in the week to come."

He at once became a favourite lecturer. It was a delight to him to impart to others the knowledge he possessed, and by the wondrous law of sympathy, this delight communicated itself to his audience. And even while with patient care unfolding the deeper laws of his favourite science, flashes of wit and fancy lighted up the subject, and made the

dullest feel enamoured of it. Some of those early lectures are still vividly remembered, notwithstanding the lapse of time. A sweet clear voice added to the charm; and foreign students, with an imperfect knowledge of English, were often advised to attend him in preference to other teachers, as being more easily followed. As the judgment of contemporaries is more to be relied on than that supplied from memory, and perhaps tinged by influences of later years, we shall give Edward Forbes's opinion in 1844, as communicated in a letter to his friend Dr. Percy:— "Wilson is one of the best lecturers I ever heard, reminding me more of the French school than our humdrum English, and is a man of high literary taste, and great general knowledge. Of his chemical views I know that Graham here [London] speaks in the highest terms, which he does not bestow on any other Edinburgh man." Had his health and strength enabled him, he would have long been a most successful teacher; but general feeble health, as a friend has truly said, "made his life of public teaching one long and sad trial. How nobly, how sweetly, how cheerily he bore all those long baffling years; how his bright, active, ardent, unsparing soul lorded it over his frail but willing body, making it do more than seemed possible, and as it were by sheer force of will ordering it to live longer than was in it to do, those who lived with him and witnessed this triumph of spirit over matter, will not soon forget. It was a lesson to every one of what true goodness of nature, elevated and cheered by the highest and happiest of all motives, can make a man endure, achieve and enjoy." [1]

Of the relaxation obtained in some degree by the return of summer, we have specimens in one or two letters, forming pleasant episodes in his outer life.

[1] "Horæ Subsecivæ," Second Series, p. 105.

During the previous winter he had suffered a good deal from rheumatism; and in the hope of regaining strength, he paid a visit in autumn to his brother in London. In his first letter after leaving home, George says, "I have stood my journey well; my general health and rheumatism are improving, and I hope to continue making progress." This hope was unfortunately not to be fulfilled, for almost immediately on reaching London he suffered from severe inflammation of one eye. The first doctor who visited him advised simple remedies, and thus time was lost, and the eyesight only saved by the use of the strongest measures. A medical friend who happened to call was the first to perceive the danger, and, being a skilful oculist, averted the evil by most anxious care; so that in eleven days he was able to write home, and to say, "My eye is now better, my general health much the same, and my rheumatism no worse. Two doctors I have met here, reckoned skilful, give promise of rapidly recovering strength, there being nothing radically wrong with me; at present, however, progress is slow." Expressions of anxiety in home letters lead to assurances a few days later: "So far as my eye is concerned, believe I am honest when I say it is quite better, at least only retains a little weakness, which obliges me to avoid glaring lights or exposure to currents of air. You will, therefore, understand that I am now quite out of doctors' hands, and absolved from medicine, recommended to good diet and care, but otherwise just as I was when I left you. As to coming home, I shall not do so immediately; it would not be safe, indeed, to travel at present, from the risk of a return of my late inflammation. London has not had a fair trial; but, at all events, I shall not remain here long. The weather is extremely fine, and I walk out in the afternoon when the sun is down, and I

think I shall make progress now day by day. Being forbidden to walk much on pavements, owing to the reflection from the hot stones, you must not look for city news, or think I am ill because I have not visited friends there."

Before leaving London, however, he can say, "The sun shines on me with a brightness, and the wind blows on me with a balminess, which they seem to have lost through this gloomy summer. The weather here has been of the finest; clear, unbroken sunshine, for the last fortnight. But yesterday a thunderstorm brought deluges of rain, and to-day we have one evendown pour, with the temperature much lowered. I hold it one of the surest symptoms of improvement, that I have lost that sensitiveness to changes in weather, which made me shiver in July, and cower by my laboratory fire. You must not expect to find me fattened up, or very much stronger than when I left, but more active and more healthy I certainly am."

It was now within three weeks of the winter session of 1841-42, which promised to begin in greater physical strength than the preceding one. How this hope was again snatched away he tells Daniel:—

"*November* 6, 1841.

"My Dear Brother,—You will be glad, I am sure, to receive a letter in my handwriting; the best evidence that I can send you that I am better. I had a very severe attack of illness, much worse than in London, and the treatment was proportionally rigorous. What was most annoying in the whole matter was, that a week before I took to bed, I showed my eye to Dr. R., the oculist, and requested his advice; by some strange mistake he thought I complained of my eyelid, and said there was nothing the

matter. In this way precious time was sacrificed, and my eye nearly lost. I never in truth spent such a fortnight of misery. I was twice cupped, blistered five times behind the ear, horribly sickened with colchicum, and severely saturated with mercury. I got worse and worse, till within three days of lecture-time, when things fortunately took a turn for the better, and my eye rapidly recovered. My first two lectures I dictated in bed or on the sofa to Mary; and my third was made up out of an old production. I have been left by the medical treatment very weak, but in the meanwhile my rheumatism is gone, and my appetite and spirits are good. Things here, however, are looking very ill; the classes are very thin; my own is like to be exceedingly small. We all looked for a diminution in numbers this winter; but the amount of decrease makes us feel rather awkward. I hope, however, to weather the winter, and have at least the consolation of feeling that I shall have the leisure to recruit my health, and some time for original research.

"I am obliged to take a coach up and down, which will prove rather an expensive thing as we now are. I am so rapidly recruiting, however, that I shall soon be able to dispense with it, and take to walking again—a mode of conveyance I for *many* reasons prefer.

"Along with this you will receive a note from Mary, saying I would not write to you, which will show what dependence is to be placed on that lady's veracity. Indeed in writing my lectures she made many (I am sure) wilful mistakes, and tried to put me out by placing the *stops* at wrong places. I shall place the stop at the right place, and end here."

A month later, he says :—

"SATURDAY, *December* 5, 1841.

"My own affairs look a little brighter; a few more pupils drop in, and with a desperate effort the year may be got over. At present it is unpaid, thankless drudgery, which makes me at times seriously contemplate the necessity of packing off to some other corner of the globe."

In January, James Russell is informed, "All your friends that I see are well and thriving; Cairns grows taller every day, and will require to be stopped by Act of Parliament. My life is the most dull and monotonous possible, and bears no fruit by way of thought or work. I work a little in the laboratory; analyse delightful (?) things and make some little discoveries. But I am easily knocked up, and after standing on my feet from nine till four, am fit for very little when the evening comes."

To his brother, who had been indisposed, the following letter is addressed :—

"*February* 4, 1842.

"I have just read your letter to mother received this morning, and mourned over the sad news. I have suffered myself this winter much from cold and cough, and others have done so, to a much greater extent than is common even in winter. The great variableness of the weather has occasioned such illnesses to a much greater extent than ordinary; and you must take hope from this, and believe you have not fared worse than your neighbours. Rheumatic head-ache is a sore thing, as I know, having had a taste of it lately; at present, however, my 'rheumatics' are quite aristocratic, setting up it would seem for gout, and have, besides various outposts for desultory skirmishing about shoulder joints and elbows, established a strong position in my ankles, where they manœuvred last night to an extent

that put sleep for a long while out of the question. My ankles, therefore, to your head, tie us neck and heel together, and we would sympathise famously; as that cannot be very conveniently done at present, you must take the heart's sympathy in lieu thereof.

"I have at last seen in the 'Athenæum' your work announced, and shall look out for it. I hope things mend a little, and the clouds break up; still I fear you are like myself trading on the future. I have begun new classes; have got six pupils, one of whom, poor soul, begged a ticket, a deserving widow's son; it did me good in my present dreariness to be able to give him one. Of the remaining five one has paid me, the others have requested to be excused doing so for some time to come, which is a very pleasant thing for a poor debtor."

To his cousin James, he says,—

"*February* 20, 1842.

"I do not think you will accuse me of Sabbath desecration because I spend a portion of this Sunday evening in writing to you. Your letter to Mary, and a statement to Mr. Cairns, lead me to lose no delay in assuring you that the evils of our present sickness have been exaggerated to you, especially in so far as I am concerned. I have, indeed, for the last fortnight, been lamed by my rheumatism settling in my ankles and knees, and making locomotion irksome and even painful; but, on the whole, my general health is decidedly better, and my energy and cheerfulness greatly superior to what they were at Christmas. The old gentleman had seen me limping, which in part resulted from my having leeched and bandaged my ankle that morning; but he also saw me eat a hearty dinner, and might have

mentioned that good symptom, which he did not, I fear. Although I walk with difficulty, and lose some sleep at night with pain, I can talk three hours, and stand on my feet all day. I do not indeed complain, and have no claim on your sympathy to the extent to which you have given it, but I am none the less grateful for it, I assure you. . . .

"At present Mary is living very low [she had burst a blood-vessel], confined to bed, and suffering (but not much) from pain in the chest; she has no cough; altogether, she is as well as could be expected, and all immediate danger is past. I think she will recover well, but slowly; but the greatest caution is necessary in all exertion. You can believe it has caused us all much anxiety and alarm, which are now, however, somewhat abated. From the doctor I have not learned anything precise concerning the nature and extent of the heart-affection.

"Mary is as contented, calm, and even cheerful a sufferer as could be seen; it is the pain it gives others, not her own sense of suffering, that afflicts her. Poor thing, she has been sorely tried by illness and sorrow all her days. Pray to God to restore and watch over her, for I fear anything like complete restoration to health is hopeless for her. Nevertheless, be not overmuch cast down; I believe this attack, which is a symptom, not a disease, may prove beneficial to her; and, at all events, it is to me a great relief and consolation to know that she is under the medical care of a very kind and skilful person."

"SABBATH MORNING, *March* 20, 1842.

"I am constrained by necessity to devote a portion of to-day to writing you. I have engaged to deliver several lectures to Dr. Robertson's surgical class. I have been occupied all this week with preparation, and shall not be

free to write a letter till Friday next, so that this deed must be forgiven.

"I am greatly pleased to read in your letter of the delight you feel in your studies; it is a sure proof you are in good health, whether your peptic mill be going right or no. It is a delicious feeling, that sober exultation which successful, pleasurable study brings; the 'exulting and abounding' emotion with which some long and rugged hill of difficulty being at last clomb, and every let or hindrance overcome, behold a Pisgah point from which a Canaan of promise can be seen. Such a feeling have I known;—'Tis gone! 'tis gone!' as old Capulet says of his cornless feet and young dancing days; but it will come back with the swallow and the summer flowers, and they will be here one of these days. At present I creep along on a pair of crutches, literally and metaphorically a lame, blind man. Nevertheless, you will be glad to hear I am mending, general health much improved, lame legs at least no lamer, much profitable and promising work chalked out for immediate and future performance; on the whole, quiet contentment, sometimes cheerfulness overflowing in its old channels, and gladdening the hearts of the much enduring, dear sharers of our little fireside circle."

"*March* 20, 1842.

"My dear Daniel,—I received your kind and welcome letter at the laboratory, and was much comforted, and grieved too, therewith.

"It seems at present dreary enough to look about and contemplate the state of business, and you, I fear, are still engaged in a desperate struggle with the world. Now, I need not offer you sympathy, you have heartsful of that already; indeed, that same sympathy is a wonderfully use-

less sort of thing, and, like Falstaff's honour, pays no debts, purchases no commodities.

"We shall therefore waive the subject, and talk of other matters. You are glad to think my old spirits are returning, and health and ability with them, and wish to know my plans and projects. Now I am so famous at castle-building, and have so often been totally disappointed in the realization of them, that I seldom talk now of what I am about to do; moreover, everything so completely depends on my health improving, that, quite unable to foresee the issue of that, I am the more inclined to 'sit still and keep silence.' I propose, however, in summer, to give a special course, addressed chiefly to the senior students and medical men, on animal chemistry, a subject of great importance, at which I have been diligently labouring all the winter. I shall bring before them a new and highly important branch of chemistry, never properly studied in this country. The medical men themselves are very anxious about it, and it was the solicitation of others that first urged me to it. My own tastes lead me to other departments, but poverty precludes their prosecution at present, and this is really as rich and noble a field as any, and grows every day more interesting to me. I have been analysing all winter, and have not a few original observations collected together. I am sure I shall be able to give a very interesting course, and I shall only lecture three days a week, so as not to overtask myself. Many of the most intelligent medical men have expressed their delight at the proposal, and have promised to attend. If possible, one of the △ brethren will lecture with me on alternate days on physiology; our courses being illustrative and complementary of each other. This is John Goodsir, a very noble fellow, a most excellent and original inquirer, and one of the most amiable and lovable of men. We are working

together at various topics of a chemico-physiological character. I shall send you the first-fruits of our labour as soon as it is published, which will be on the auspicious 1st of April. John Goodsir will be hampered by circumstances which may prevent him lecturing; I shall, whether he does or no.[1] I do not expect pecuniary return from these lectures; I shall have to give away a number of tickets, and only the senior students will attend. But I have no doubt I shall clear all expenses, and I shall raise up a host of friends who will tell upon my winter course, besides making myself better known. If my health only improves, with God's blessing, I shall do bravely.

"In the meanwhile I have engaged to deliver, next week, three lectures to one of the surgery classes, on the composition and mode of analysing calculi. The preparation for this has prevented me writing you sooner. These lectures are intended as prefatory and introductory to the summer course, and are delivered at Dr. Robertson's suggestion and request.

"As to myself and my state of health, I am much better, and hope soon to bid farewell to my present aches. That I have often written to you in another than the old merry mood will not surprise; you know with all my faults I am not a hypocrite, and never conceal, or seek to conceal, the mood I am in. But if I have been grave, I have never been melancholy; I have neither desponded nor repined, but have struggled throughout to bear patiently every pang. I bow myself with the most sincere resignation to God's will, and pray that I may in all respects be strengthened and bettered through affliction. And yet overflowing mirth which could disport itself in letters, I could rarely boast of. For the last five weeks I have not had a night's

[1] Mr. Goodsir was unable to carry out this arrangement.

unbroken sleep through pain, and even the repose, such as it was, has been procured only by the nightly use of morphia. Even so late as a week ago, I had to stop in the middle of a lecture, overcome with a severe paroxysm, and go straight home. And what has stood even more in the way of writing, has been the weakness of my eyes, which are easily irritated, and scarcely stand even shaded gaslight, so that I have written generally very hastily, not revelled in my thoughts as I used to do. Nevertheless, if you were to stumble in some night at tea-time on us here, you might find me at my old tricks, retailing some jest picked up through the day or ——; but I need say no more, you would find me the old fellow, with the old nonsense in my head, cheering the hearts of our much-tried and often sad home-circle. Mary is no worse, and I hope will amend still more; the rest of us are well.

"P.S.—I hope you *are not* swallowed up by the earthquake.—Your loving brother,

GEORGE."

"*March* 26, 1842.

"Yesterday, which was Good Friday, I religiously observed by eating a hot cross bun, and enjoyed a holiday from my labours. I had been working double tides all the week with the lectures I spoke of on the calculi, and was fairly worn out with four hours' speaking per diem, not to mention the preparation, etc. But you will be glad to learn that I had an audience overflowing, crammed to the door, and scarcely even standing room to be had, and this for three days consecutively. Several elderly gentlemen attended, and said very polite things to me after lecture. The class was most attentive, gave me abundant applause, and

through side channels have communicated their great satisfaction. I knew the subject, had a sufficiency of well-contrived experiments, which, as they say of fireworks, went off well, plenty of specimens from the surgical museums, diagrams, and other appliances. I was very stupid, bad headache, and no appetite, took no dinner for three days, and had to lecture at the unpleasant hour of 4 P.M.; but that nature which has given horns to bulls, has given me a tongue which nothing but death will keep from wagging; and as I was alive, or semi-alive, wag it did to some purpose. The great object of this seemingly conceited prologue is to let you (whose interest in my welfare I do heartily acknowledge) see that there is the best hope for the proposed summer class, for which John Goodsir and I will now with undivided attention work.

"Mary is neither worse nor better, still a complete invalid, and requiring the utmost care. We are all otherwise well. The first blink of sunshine that reaches my hazy soul shall give rise to an epistle to Maggie; meanwhile excuse this scrawl; my eyes oblige me to write little."

"*May* 4, 1842.

"I could not answer your kind note sooner, having been engaged for the last week in preparing lectures for a course I began to-day on animal chemistry. I delivered my introductory lecture to a good audience, who were pleased to think highly of it; and being freed from the burden of it, I can peacefully write you a few lines.

"Mary is better than she was when I last wrote, and able to be out of bed some hours daily. She cannot write, or she would tell you how much she was refreshed by your letter; it is a most difficult thing, as you say, to write to invalids, whose moods are ever changing, without the nature of their

change appearing outwardly, or being always susceptible of communication by letter. But I hope we shall see her improve in the course of the summer. For myself, I have not crossed the threshold till to-day for the last three weeks; I am so lame as to be unable to cross the room without the help of a stout stick, and there is no immediate hope of betterness. The doctors forbid me attempting to walk, and gravely, seriously recommend a crutch, or a wooden leg (the latter not being intended to supplant, but to complement the living limb).

"I am in the best hands, and have certainly improved under the treatment, but it is weary work lying on the sofa when in the house, and still wearier to have to employ a coach (eating a sore hole into my small earnings) whenever I go out. I pay no visits, thinking none of my friends worth a coach fare. And they manifestly rate me at the same value, or they would occasionally despatch a vehicle for my worship.

"I have made a contract with a coachman who carries me up and down at stated hours, and I find all the consolation I can in lying all my length on the cushions, and gazing with a majestic air on the pedestrians broiling in the sun. It's a fine thing a coach, a very fine thing, and I am the only chemist, except the Professor, who can afford one; and I am inclined to think mine is the handsomer turn-out of the two. It is rather costly, however, and a project I have set (instead of myself) *on foot*, of paying my way (literally paying my way) by offering my friends sixpenny or threepenny rides according to the distance, has not been so successful as I could have wished. I observed to the coachman to-day, that if it was not for lame people like me, he would often want a job, and that I need not expect much compassion from him. I am not sure that he knew

what the word compassion meant, but he was not destitute of the reality, for he insisted on helping me upstairs, and as good as carried me to the top. One great consolation, however, still remains, in thinking of the vexation the bootmaker must feel in knowing that my shoe-soles will not be thinned by the depth of a wafer by all my locomotions.

"'God tempers the wind to the shorn lamb,'—is not that a beautiful thought? To me that expression so fully conveys the idea of the kind way in which God moulds our state of mind to our condition, that for these words alone, I can reverence their author Sterne, a man not otherwise ranked among my idols. And among the things I have lately been most thankful for, was the power at times to turn away a dark or sorrowful thought by some perception of the ludicrous in things around. Our great sources of consolation are not to be wasted on everyday griefs; but these, little as they singly are, may, by oft repetition, devour a man piecemeal. I have a friend, a solemn serious pious man, who thinks he will be allowed to laugh in heaven. I daresay he will, but if he laughs as loudly as he does upon earth (like to the neighing of a troop of wild horses), he will get a box on the ear now and then from the angel Gabriel, for drowning the melody of their harp-music.

"At this rate I don't know where I'll land next, so I shall be warned and stay my mad pen. This is a love-letter to yourself. I only send the love at present to Maggie, and bid her give the same to my dear god-daughter, who is often in my thoughts."

In a letter of this period, Dr. Cairns tells James Russell of the introductory lecture spoken of in the letter just given :—

"I never," he says, "admired anything more than your cousin's firmness in writing down the agonies of pain. I heard his opening lecture on Animal Chemistry with great interest and instruction. He has a very fine and penetrating mind, and is marked out for eminence. We are getting wonderfully intimate, and I enjoy nobody's society more."

A few weeks more, and George's struggle to keep at his post, in spite of physical suffering, was at an end. The facts are best given in his own words to his cousin :—

"*May* 24, 1842.

"My dear James,—I have this morning received your kind letter, which, if it has grown out of a root of sadness, bears blossoms only of mirth and humour. But so it is always,—the gravest, soberest people, by their own account, are the best comforters of those they favour with correspondence; and I have need of all the comfort you can give me. You ask me to tell you about my lectures and pupils, and in return I have to reply that I am obliged to abandon both. My foot, which was pretty well when you were here, has daily been growing worse; and yesterday I was informed by Professor Syme that I must abandon all active exertion, and prepare myself for the tender mercies of the surgeon. Accordingly, I am returning the pupils their fees, and in ill health and debt retire from the struggle. My only consolation is, that I have done all I could do, and have fought against difficulties till courage and patience would avail no longer. Had I known how seriously my foot was affected, I should never have begun, and I have greatly aggravated my complaint by persisting in working when I should have been prostrate in bed or on the sofa. To that I am reduced now, having yesterday con-

cluded arrangements for relinquishing teaching. Even had the doctors not insisted on it, I could not have carried on longer. I was perfectly helpless, could not put my foot to the ground, and had to be carried up and down stairs on every occasion. I lectured standing on one foot, and had to use a crutch when I attempted locomotion unaided. Within the last week, however, the pain has greatly increased; become, indeed, perfect torture; and I rest or sleep in one unchanging and unchangeable position. When not in motion, however, the pain lulls, and perfect rest, with surgical aid, I hope will soon abate it, and lead to amendment.

"At present, however, just struck down unexpectedly from all my hopes, I cannot look hopefully to the future, and must recover the stun and shock of my fall before I become alive to all the comforts that yet surround me. But know this, at least, for your consolation, that, though often despondent, I do not repine, and do never seek enviously to contrast my own position with that of others. This much of peace of mind God has granted me, and I trust he will vouchsafe patience and courage to bear all that is sent me. I believe that, even for this world, all noble characters are perfected through suffering; and in that spirit I try to endure all things. But flesh is weak, and I know this too well to vaunt anything at present.

"Meanwhile excuse the sombreness of this letter, and do not distress yourself for me. You cannot assist me but with your sympathy, and on that I count to the fullest already.

"Everybody is very kind to me; the brethren of the Order have proved true brothers to me. The very surgeon looked concerned, as if he had no other patient to feel sympathy with. But the surgeons are more kind-hearted men than they get credit for."

A fortnight later, additional gloom is added to the scene by a return of inflammation in George's left eye. Mary reports that, "though still a prisoner to bed, a very slight improvement is visible in the foot. He is doomed to a dark room, and Jessie spends every leisure minute reading aloud to him. Alison's 'History of Europe,' and Madame Junot's 'Memoirs,' are the books at present in use. I should have added to my account of the invalid life, that George is ordered to the country as soon as he can bear removal."

Written at such a time, the following letters may serve to illustrate the genial kindliness of his nature :—

"*Monday, June* 27, 1842.

"My dear James,—I have not looked out at the window for five weeks, so of the outer world I can tell you nothing, and my inner world is not worth the looking into. I am to be shipped off to the country, Newhaven or Seafield, as soon as I can bear removal, and then I shall hope to see yourself among us. John Cairns has been most kind, has called twice a week, and brought me books, and in every way contributed more to my comfort than any other of my friends. His friendship is a debt I owe to you, and I give you a mountain-load of thanks for it. He was with us last night, and had been called on while absent by some individual, whom he supposed to be you. Have you been somnambulizing, or making spiritual progressions along the railway—the body being left behind for the sake of coolness? I did not think it could be you, but would not be positive. Make a clean breast in your next."

"*29th June*, 1842.

"My dear Daniel,—I was prevented writing to you last night by S. Brown coming to spend the evening with me.

To-night I am alone, and may, in the first place, inform you that I am ordered off to the country, and shall remove to the seaside on Monday next. I am now nearly free from pain, except from an abscess which has formed near the heel; but as the doctors think it will prove on the whole beneficial, I don't mind the trifling amount of suffering it entails. It makes a very great difference on the feeling with which pain is borne, to know that its issue will be favourable; the same amount of it, if known to be the index of formidable or incurable distemper, would seem unbearable.

"You tell me in your last you still write verses. I have entirely abandoned the *task*, as I may truly call it in my case. Indeed, in the utterly prostrated state of mind in which for the last year I have been, I have avoided even reading poetry. To relish it—and the same remark applies to music—I find in my case a certain elasticity and exhilaration of mind necessary. When I opened old favourites, I was so pained to find the passages I used to thrill over become flat and unprofitable that I closed all of them,—resolved that they should lie unopened till restored health enabled me with the old emotions to read them again. With the solitary exception of Milton, accordingly, I have not read any poetry for the last twelvemonth. In addition, I feel myself now obliged to devote all my thoughts to science, and blame myself for every moment which I spend away from it. I am like a stranded ship, lying powerless in the sand, with sails idly flapping on the masts, while those who set sail with me, with like hopes and chances, are far ahead out in the open sea. Every occasion, therefore, on which I feel revisitings of my old energy, is spent in making such preparations as may enable me to be ready for active service should I get afloat again. Now, poetry was never

with me a mere source of idle amusement, to which I could turn for relaxation, and listlessly smile over, lying on a sofa; but, on the other hand, a field for as tough intellectual gymnastics as any scientific problem, and the pleasure arose from the new thoughts struck out by the conflict between the author and his reader. Now, however, in relaxed seasons the battle is too hard work, and the idlest book on the foolishest subject is the most agreeable. I am sure you can understand the feeling which I lamely strive to portray. I think the great poets too worthy fellows to be handled with my worn-down emaciated thoughts. I think the same of the musicians, and listen to none of them. I have felt the same towards the greater scientifics; but they are my 'daily bread,' and habit, and a sort of shop instinct, make me keep munching at them, though often out of a goodly loaf I digest but a few crumbs." . . .

"*June* 30, 1842.

"My dear Daniel,—A few words with you on whatever comes uppermost. It's but a poor one-sided apology for conversation this epistolizing, but pleasant too in its way, doing one's heart good. As I lay on the sofa this morning, 'fast anchored' as usual, I recalled in thought a most beautiful poem, written by a young Edinburgh advocate, called Aytoun, and which you will find in Blackwood for last year. The title is 'Harmotimus,' or some similar name, and should you stumble on it, read it; besides other points of interest, it will make you acquainted with a beautiful but difficult measure, borrowed from the German, a language which infinitely transcends ours in its capabilities of modulation, and can, in fact, imitate the measures of every nation under heaven. The poem is founded on an old Greek story of a philosopher who possessed the power of

separating his soul from his body, and sending the former on errands of its own. As his soul, to which time and space were nothing, was often absent for days together, he gave strict injunctions to his wife to take care of his body during its soulless condition, and not to be alarmed though it should seem lifeless even for long periods. Secure in this arrangement, he made many spiritual excursions in all safety, but at last, lingering away too long, his wife thought his body was fairly dead, and burned it. Truly it was a dangerous power to put in the hands of a woman. We know a wife or two who would be very glad their husbands had the disembodying secret, and with help of a lucifer-match would effectually secure against their revisiting the glimpses of the moon. I accuse not, however, the old Grecian matron, though hers may have been a Lucifer-*match*, which she was thankful to burn to ashes as fast as she could. But as a process for getting rid of a husband it beats arsenic hollow. Your arsenic settles Mr. B.'s connexion with this world, and once he's coffined, unless those prying wretches the chemists dig him up to analyse him, you are done with him. But there's another world, Mrs. B. and what will you say when you have to face him there? Matron Ione (please to observe it is *Ionê*, no relation of either Jenny or widow Jones), however, had fired the match at both ends, and philosopher Glaucus had 'lost his vote' in both worlds. In vain did the shivering soul come back for its body-coat; it was dust and ashes. It could not sit down in its own mansion, though empty seats, with soft cushions, were there in abundance, for the same reason that keep cherubs always on the wing. And then, poor soul, it had no passport for the next world. Charon demands to see a properly made-out discharge from the upper world, and it did not get so much as a notice to quit. The phi-

losopher's soul wanders yet a pale ghost on the wrong side of the Styx, while Ione has long ago been safely ferried over.

"I have been enquiring of a person lately come from Greece if he had fallen in with the recipe for disembodiment, as, having no wife to be afraid of, I might, without apprehension, put it in practice.

"I should explain to my body, that it was a hard case it must go wrong and require cuttings, and burnings, which made me (the soul) agonize, while it was indifferent, feeling none of them; explain my intention of being an absentee till it saw fit to mend matters; and then, escaping through a pore in the skull, come whizzing south, and alight upon the bridge of your spectacles, perched astride of which I could peer into your eyes and commune with your spirit. If you should feel any uneasy sensation about your nose, rub gently; souls are fragile things. Meanwhile, I have exchanged such communion with you as I can, and sign myself, soul and body, your loving brother,

GEORGE."

"*July* 2, 1842.

"MY DEAR DANIEL,—If I could only sit upon a chair, which, like the disembodied spirit I spoke of in my last, though not for the same reason, I cannot do, I should write you longer letters. But I have to lie in a twisted position, which I cannot occupy long, and last night I took a holiday, there being no post to carry you a letter. We are making preparations for removal to the seaside on Monday; we all go down. Seafield is no very inviting place, and there are no walks near it, but I am obliged to take a lodging near enough Edinburgh to admit of the doctors being within call. Moreover, I shall not be

able to cross the threshold for a while, and then only to creep about the door on a pair of crutches, so that it is indifferent to me where I go, provided the sea and the sea-air are present. Portobello is such an abominably public place that I should fear to move about, and I am not enticed by the attraction Mr. Syme held out of its possessing a circulating library.

"We scientifics, I can tell you, are very indignant at the recent knighting of three painters and a musician, while not one of us has, for I don't know how long, partaken of any of the smiles of royal favour. It is really too bad. We have men, I make bold to say, of far higher deserts in their crafts than the artists were in theirs. However, if Her gracious Majesty would give us some hard cash, we should not mind letting the artists pocket the stars and ribbons. There is a petty German duke enabling Liebig to beat all the English chemists hollow. If a tithe of what is spent on masquerades and trumpery, dogs and stables, were granted to some school or university to fit up and keep in existence a well-appointed laboratory, the whole country would be the gainer. Liebig is a man of genius of the highest order, and would unfold himself though he had not a sixpence; but he could not have reached the eminence he has done had not money in sufficiency been supplied him. Here our very professors can scarcely keep life in them. Chairs are not worth the having, even as sources of income, and there is no surplus to spend on experiments. As for private teachers, no one is much better than myself. Teaching is at an absolute stand.

"It is really disheartening to see the possibility of doing something in a science you love and profess, almost annihilated by the cost it takes being beyond you. I have been urged to go to Paris, where I should be sure of practical

chemistry classes, like those here, succeeding, but it is a long step to Paris, and I should require to know French, and a great many more things before I thought of it. Are not these fine dreams for a cripple? But if I went abroad it should be to Germany, a quiet country, which would exactly suit a politics-hating man like me. Government there has all the university patronage in its hands, and young men of promise seldom fail to get on. Did not I meet a young fellow a little older than myself, who was Professor in the Prague University, and had, in addition, money and two years allowed him to travel where he listed? It would little vex me that there was censorship on the press, unless it should go the length of the Russian one, which prevented a traveller bringing into the country a work entitled 'Revolutions of the Heavenly Bodies.' The inspector took alarm at the first word, and objected to any revolutionary work being admitted. In vain did the traveller assure him that it was only an astronomical treatise. It did not matter, they did not approve of revolutions of any sort. The fatherland has many charms for me, which are likely delusive enough; but my motherland has charms too, and I believe I shall live and die in her much-loved arms. Now I have had my grumble out, and am a great deal the better for it. It's like 'a good cry' to a young lady."

The following portion of a letter, though without date, may justly find its place here. It is addressed to Daniel. The veil which conceals his sufferings so carefully from the loving eyes of friends is for a moment lifted, and we see the strong, brave spirit in its agony :—

"With all your sorrows I sympathize from my heart; I have learned to do so through my own sufferings. The same feelings which made you put your hand into your

pocket to search among the crumbs there for the wanting coin for the beggar, lead me to search in my heart for some consolation for you, if mayhap the dried-up fountain may yield a drop of comfort. The last two years have been fraught to me with such mournful experience, that I would gladly exchange my condition for a peaceful grave. A bankrupt in health, hopes, and fortune, my constitution shattered frightfully, and the almost certain prospect of being a cripple for life before me, I can offer you as fervent and unselfish a sympathy as ever one heart offered another. I have lain awake, alone, and in darkness, suffering sore agony for hours, often thinking that the slightest aggravation must make my condition unbearable, and finding my only consolation in murmuring to myself the words patience, courage, and submission.

"You have done the same, and God, who has supported both of us through cruel trials, will not desert us in our great need. My religious faith is feeble, because my light is dim, and my knowledge scanty, but I pray for more. I have felt assured of answers to prayer already.

"Even in this world, I feel firmly convinced there is no worthy character, even for worldly work, who has not been 'perfected through suffering.' Affliction has not developed the vices of my disposition; it has pruned some and banished others. My intellect is purified and ennobled, and many mists which vanity spread before me are blown away. Take comfort, my dear brother, we shall yet do well."

From Seafield, letters to his friend Miss Abernethy give peeps at his invalid life, and show how every ray of sunshine was turned to account. Miss Abernethy's acquaintance was made in the beginning of George's student life, through her nephew Dr. Niven. An intimacy then sprang

up with the family at Willow Grove, which each later year became more close and tender. Miss Abernethy was truly a second mother to George, but the affection on both sides was usually hidden under a guise of fun of the most exuberant kind, he representing himself—in sportive reference to the difference of years between him and his matronly correspondent—as her devoted swain.

"SEAFIELD, *July* 16, 1842.

"MY DEARLY BELOVED, UNFORGOTTEN, AND UNFORGETABLE JANET,—I have now been a fortnight in this region of invalids, and think it due time to send you a bulletin of my well-doing. I am happy to say I mend, though still unable to cross the threshold, and hope soon to be able to flourish my crutches with as much grace as such untoward weapons admit of. I count some five cripples from my window, and propose, as soon as I can join, to suggest our having a race upon the sands. The prize to be a handsome pair of crutches, and each candidate to be at liberty to knock the stilts from his neighbour if he can. You may expect a visit from an official, asking your subscription, and for my sake I trust it will be liberal.

"In the meanwhile, by way of preparation, I snuff the sea-air at the open window, and am complimented by visitors on the improvement of my looks. I cannot say that, on consulting the looking-glass, I see therein a very pretty countenance, but I incline to think that my modesty and well-known humility stand in the way of my discernment, and that but for these I should observe that my former knobbed and twisted nose was now moulded by the sea-breeze into a proboscis of Grecian form, and marble polish and whiteness. If the sea-breeze alone has produced so great a change, what may I expect when I am able to

tumble into the water, and enjoy the benefit of wind and wave at the same time? Meanwhile, till an end so desirable is brought about, I find my life so eventless that I can record for your edification nothing more wonderful than my removal from the bed to the sofa, and back from the sofa to the bed again, like the worthy Vicar of Wakefield, who chronicled the removals from the blue bedroom to the yellow, and from the yellow to the blue.

"The monotony of my daily life is somewhat broken in upon by the swarms of children who play about the door. They are, for the most part, the ordinary set of sinful imps to be met with here below, alternately kissing and fondling each other like so many angels without wings, and then, when the devil, or 'original sin' gets into their hearts, kicking and cuffing like reprobates. There is one exception, however, to the foregoing description, in the person of a neat little lassie, with a sunburnt pretty face, and long fair ringlets. I have learned this little lady's first name, Aggy; a lady's last name does not matter much, being only intended for temporary employment, till a better name can be found for its proprietor. I of course exclude from such remarks those exalted members of the sex, whom, as patterns to mankind, Providence, for wise purposes, permits to husband their names, instead of getting husbanded themselves.

"My attention was first attracted to this young lady by a highly original observation I heard her make one day. She was lying all her length on the grassplot, kicking up her heels in the air, and proclaiming that 'Johnnie Ritchie's name was *not* Johnnie Ritchie.' Who Johnnie Ritchie is, I don't know, perhaps some relation of your friend Daniel, who may be able to say what his name is, though I fear nobody born out of Ireland is likely to throw much light on the matter. I have inquired at Aggy herself

concerning Johnnie, but she preserves the profoundest silence, and looks indignant; so that what Johnnie Ritchie's name is I see no hope of discovering.

"Yesterday, had I had any Samaritan to carry me out on his back, I might have seen something out of the way. It appears that an unchristian man and woman, instead of going to church and hearing sermon, made a pilgrimage out to the Black Rocks, and seated themselves thereon, whether to meditate or gather mussels I do not know. The tide, however, came in, and surrounded them, and for a while there were great hopes that they would be drowned, which would have been highly satisfactory to the lookers-on, who had waited a while in expectation, and would have liked to see something after standing so long. The couple sat on the rocks, like two crows or sea gulls, apparently resigned to their fate, till, on the church's dismission, and their situation being discovered, a boat was launched, and in addition, three stout men stripped and swam off to save the Sabbath-breakers.

"Instead of sitting still till assistance came, they proceeded now to try if they could not wade in. The first step took them over the shoulders; but nothing daunted they pushed on, and fortunately found it no deeper, though, as the wind was up, the waves came over their heads at every surge. On the whole, however, the last occurrence might be beneficial, for their heads could not be kept too cool in such a predicament. They finally found their way to shore without help of boat or swimming-men, looking, however, literally and metaphorically, a little blue.

"Such are the contents of my Seafield journal, barren enough; but I promised I would write, and you must forgive its emptiness.—Your ever affectionate

GEORGE WILSON."

"Seafield, *August*, 17, 1842.

"My dearly beloved,—How fares the world with you? Except in my dreams I get no account of your ways and welfare, for all the channels by which intelligence of you used to reach me are dried up, and for anything I know to the contrary, you may be changed into Mrs. J. T. or Mrs. D. R.; and the arrival of this epistle may be the cause of a dreadful domestic scene and half-a-dozen duels. However, make up your mind to this, that the moment such intelligence, duly authenticated, reaches me, I shall commence an action for breach of promise, and make a clutch at your hoardings.

"In such a predicament, not knowing whether to address you as miss or matron (though determined whatever betide, to claim you as my Janet), I am reduced to the painful necessity of either speaking of myself, which is anything but pleasant to a man of my modesty, and may, moreover, not be so acceptable to you as it once was—hem! or of seeking out some common topic whereon I may enlarge for our mutual edification.

"Of myself, I will only say this much, that whether you are pleased to hear it or not, I make daily invisible progress in amendment; though I grieve to say that the classicality of outline, of which I spoke in a former letter as developing in my features, is not so apparent as it was, and my nose is as red as ever. I now flourish upon my crutches and make daily excursions to the sea-side, where they plant a chair, on which I sit and meditate on the ladies bathing and the other wonders of the great deep.

"But I have got something better than the crutches to progress with; my good uncle (these uncles and, above all, aunts are the great blessings of creation) has most kindly purchased a little horse, which he sends down to us, along with a comfortable gig, and I go whisking over the country, to Dalkeith, Musselburgh, Prestonpans, Cramond,

and so forth, making all sorts of geographical discoveries, especially concerning the existence and site of turnpike gates and toll-bars, which have now acquired an interest in my eyes equal to that they have in my purse. I shall be in town in a fortnight, and there is no saying whither I may penetrate in my shandrydan. If you have any interest in my welfare still remaining, you may keep a sharp look-out for a little horse of a sort of ginger colour, the lightest brown, cream-colour with a slight dash of brown over it."

The sea-side residence, rest, and simpler appliances, all proved ineffectual. Nature had not strength to work a cure where the evil had become so deeply seated. George's father had suffered much in the same way for years, rheumatism throughout the body ultimately settling in the ankle joints. In his case it had been thoroughly cured by care at an early stage, but the tendency was probably transmitted to his son.

After returning to town, the kind and anxious medical attendants—Professor Syme and Mr. Goodsir—cauterized the foot more than once, but all seemed in vain, and each day left less hope in the hearts of the home circle, as his strength visibly decreased. In December a long letter to his cousin, "dear Jeems," gives token of unquenched heartiness amidst the deepening shadows. Speaking of the death of Mr. Kenneth Kemp, his fellow-teacher in chemistry, which had just occurred, he says,—

"And now that the ground is clear, I have to sit quietly by, cultivating patience, and seeing some one else step into the poor fellow's shoes. Well, seeing that *shoes* are out of the question with me, and that I could only at furthest step into another man's *shoe*, I won't be mulcted out of my patience by any man, but bide my time.

CHAPTER VII.

RELIGIOUS LIFE: RETURN TO PROFESSIONAL LABOURS.

"Deep calleth unto deep . . . ; all Thy waves and Thy billows are gone over me."

"Cast down, but not destroyed."

A CRISIS was again approaching in George Wilson's life more momentous than any hitherto considered. At the close of the year 1842 it seemed evident that the contest with suffering could not last much longer, rest being only attainable through the use of opiates.

A record in his own words[1] conveys forcibly a statement of the facts: "I was required to prepare, on very short warning, for the loss of a limb by amputation. A painful disease, which for a time had seemed likely to yield to the remedies employed, suddenly became greatly aggravated, and I was informed by two surgeons of the highest skill, who were consulted on my case, that I must choose between death and the sacrifice of a limb, and that my choice must be promptly made, for my strength was fast sinking under pain, sleeplessness, and exhaustion.

"I at once agreed to submit to the operation, but asked a week to prepare for it, not with the slightest expectation

[1] "A letter to Dr. Simpson on the Anæsthetics in Surgery, from a Patient's Point of View."—Simpson's "Obstetric Works," vol. ii.

that the disease would take a favourable turn in the interval, or that the anticipated horrors of the operation would become less appalling by reflection upon them, but simply because it was so probable that the operation would be followed by a fatal issue, that I wished to prepare for death and what lies beyond it, whilst my faculties were clear and my emotions comparatively undisturbed, for I knew well that if the operation were speedily followed by death, I should be in a condition in the last degree unfavourable to making preparation for the great change." The week of delay granted by the surgeons passed slowly yet swiftly away. He concealed from the relatives around what was at hand, partly from an unselfish desire to spare them the grief it would cause, and partly from a fear that his resolution might be shaken by witnessing their distress.

At this time he felt himself brought face to face with death. He was not one to stand back from it in a cowardly spirit, but he was too thoughtful and earnest not to be awed and solemnized by such a position. He spent the week previous to the operation in quiet but deep meditation as to his fitness for entering upon that unseen world, then brought so near to him. A small copy of the New Testament was his constant companion, and every available moment up to the coming of the surgeons, was devoted to its perusal. In our narrative evidences of his interest in religion from boyhood onwards have not been wanting. A consciousness that life, even with highest intellectual development, is imperfect without a living relation to God, seems to have been present even in his most ardent longings after success in scientific pursuits: and a groping after Him is perceptible in several letters. Nevertheless, that one thing was yet wanting in George Wilson's life, he himself freely acknowledged. Not yet had a living faith in God been

developed, nor had he dedicated himself to Him who claims each man as rightfully His own. In this time of deep thought, however, he underwent a mighty change. He, himself, always regarded it, as the time when a new life dawned in his soul; and another, John Cairns, thus writes :—

"I remember, with vivid accuracy, the earnestness with which, on the last occasion I saw him before the operation, he spoke of the danger before him, and of the great anxiety, mingled with trembling hope in Christ, which he showed as to his spiritual state. He took the Bible, asked me to read and explain or enforce some passage, and then pray. The remembrance of that day survives, while the multitude of other conversations have left only a vague impression of progress and saving enlightenment."[1]

There is no one who looks honestly into his own heart, who does not find there a burden of evil, too heavy for man to bear; and it was so at this time with George. In humility and trust, however, he came to Him who has borne our sins, and who is able to take our burdens away; and thus was this great sorrow the occasion of the greatest joy of his life, the joy of resting in that Saviour, whom he ever after sought to serve and honour. Henceforth he regarded himself as no more his own, but as one consecrated to God; and thus we find him in his subsequent life, actuated by other principles than we have yet traced in him; and his aims were higher than any which he had set before himself, even in the best days of the past.

It was during these few days, so important in their bearing on all his future, that his friendship with John Cairns (then a student of Divinity in Edinburgh) was so deepened, that ever after, it was one of the dearest relations

[1] "North British Review," February, 1860.

of his life. To him, James Russell owed deliverance from many doubts; and for some years he had been on a footing of intimacy in the household. Now, he was as the ministering angel of George's sick chamber, and with the tender love of a brother did he commune with him on the high theme which entirely engrossed George's thoughts; meeting difficulties, and in every way soothing the distressed and burdened spirit of the sufferer. Afterwards, we shall find George speaking of him as his "spiritual father;" so that it is not to be wondered at, that the relations subsisting between them, continued to be most tender and true.

On the morning of the operation, with a "trembling hope in Christ" in his heart, he performed his toilet with unusual care, in order to disarm the apprehensions of those beside him, in whose hearts an instinctive fear lurked, knowing that the surgeons were to come that day. However, the *ruse* was successful, and the truth was only revealed to them by the irrepressible cries of agony from the sufferer.

"During the operation," George says, "in spite of the pain it occasioned, my senses were preternaturally acute. I watched all that the surgeons did with a fascinated intensity. Of the agony it occasioned, I will say nothing. Suffering so great as I underwent cannot be expressed in words, and thus fortunately cannot be recalled. The particular pangs are now forgotten; but the black whirlwind of emotion, the horror of great darkness, and the sense of desertion by God and man, bordering close upon despair, which swept through my mind and overwhelmed my heart, I can never forget, however gladly I would do so."[1]

The object in recalling such painful emotions was to

[1] Letter to Dr. Simpson.

make them an argument for the use of anæsthetics, which, had they been then in use, would have robbed this experience of the greater part of its horrors.

The operation was an interesting one in the annals of surgery. He says to James Russell shortly afterwards, "I do not wish to trouble you with surgical details, but you will be glad to know that the operation I underwent was a novel one (tried on me by Professor Syme for the second time only), which leaves me the whole leg, depriving me only of the foot. It was more protracted and painful than the ordinary one, but it leaves me a more useful limb; and the doctors hold out the hope of my being able to limp about with a wooden foot, or stuffed high-heeled boot, without betraying to every eye the amount of my loss."

A time of miserable suspense followed, from the fear that his strength was too far gone to rally; and quiet being enjoined, for days there seemed not a sound in the house. In a diary of James Russell's, we find the following entry on the 16th of January, illustrative of the state of things:—"Appalling *yet comfortable* news of George's amputation."

A letter to him from Dr. Cairns remains as a photograph of those days of trouble:—

"*January* 17, 1843.

"My very dear Friend,—You are no doubt discomposed, as I myself have been for some days, by the operation performed on Dr. Wilson. As I happen to have been thinking of him perforce for some time with peculiar interest, you will, I have no doubt, welcome every particular. Everything, by the special blessing of God, has as yet gone admirably; so much strength of mind as to resolve to keep all to himself till the crisis; so much coolness and presence of mind as to impose on all who saw him; so great firmness

during the operation and composure after it; such a comfortable wearing off of the first rude shock produced in the family, without detriment to the health and spirits of any; and so favourable a progress hitherto of the wounded limb, all certainly are most striking and consolatory; and whether we suppose any supernatural [1] grace or not, call equally for gratitude to Him whose benignant providence is the only present help in trouble. After an absence of three days, I had the happiness of seeing them all to-day in circumstances of peace and hope. I was also admitted for a few minutes to the room of the doctor, and exchanged a few words, and engaged for a very short time in prayer. He is, of course, weakened; but the expression of countenance, and look of self-oblivion, which I never saw him lose in the worst days, are the same. . . . All danger is now, humanly speaking, over, and I trust our prayers and anxieties, which are already passing into thanksgiving, may soon be for nothing but grace to improve past affliction and deliverance."

It was on this visit that John Cairns was able to come forth with an announcement that in the mind of the sufferer all was peace and joy. To the sorrow-stricken mother this was an unspeakable comfort. "If *that* be the result," she said, "then all is well." An expression of sympathy with his sufferings made by her, called forth the remark, "Don't regret them; think how much better off I am than so many in the Infirmary. Besides, I have learned from them to look at things in a new light, which is worth them all."

From letters of later years we gain further insight into the mental struggles of this season, the more precious, that, being averse from speaking much of his inner life, a few

[1] *Supernatural* seems here used by the writer in a sense akin to *preternatural* or *miraculous*.

earnest words uttered when the deeper emotions were stirred, were all that ever could be obtained. The first extract is from a letter to Dr. Cairns on New Year's Day, 1854 :—"There is no day so painful to me to recall as the first of January, so far as suffering is concerned. It was on it, eleven years ago, that the disease in my foot reappeared, with the severity which, in a few days thereafter, compelled its loss, and the season always comes back to me as a very solemn one; yet if, like Jacob, I halt as I walk, I trust that, like him, I came out of that awful wrestling with a blessing I never received before; and you know that if I were to preach my own funeral sermon, I should prefer to all texts, 'It is better to enter halt into life, than having two feet to be cast into hell, into the fire that never shall be quenched.'"

And to a young friend he says, in 1847 :—"I can profoundly sympathize with your feelings of agitation, agony, and alarm, at finding your strength and health failing, and another world looking closer at hand than it did a short while ago. I have been in this condition, and only passed out of it after a spiritual struggle such as I still feel appalled at gazing back upon.

"When I was recovering, you can well believe that there were many weary, wretched, sleepless hours, especially during darkness. Particularly dreary was the first waking in the dull grey morning. Despair seemed ready to overwhelm me. It was then I fully realized the unspeakable preciousness of prayer, and that not to an overwhelming mysterious agency such as electricity or gravitation, but to an *agent*, a Person, and he not separated from me by all that intervenes between God and man; but possessing, as I possess, a human nature, though (unlike mine) his nature is sinless, and is unspeakably glorious."

Recovery proceeded favourably, so that in six weeks the wound had closed—all but one small aperture, and he was able to move about a little on crutches. "He came forth with a spirit strengthened from heaven, to bear the life-long burden of a feeble body, and to accept life on the most disadvantageous terms as a blessed and divine ministry. The inward man had gained infinitely more than the outward man had lost; and, with all his originally noble qualities exalted, there was found a humility, a gentleness, a patience, a self-forgetfulness, and a dedication of life to Christian ends and uses, which henceforth made every place and work sacred."[1]

What has been truly called "his unconquerable gaiety of heart," is seen in one or two notes written in the first few weeks after the amputation. The first two are addressed to James Russell, who was giving expression to his sympathetic love in all kinds of presents, to cheer or amuse the patient. One of these was an accordion, which he fancied might help to beguile the tedious hours of convalescence. The first letter is merely dated "Friday," but it is evidently written about the close of January:—

"My dear James,—Your kind letter demands something more than a mere statement in Jessie's bulletin concerning me. I could write you a whole folio of news from the world of pain, so far as intellectual capacity is concerned, or even physical strength, but I have to lie in such a constrained twisted posture, propped up by pillows, and what not, that I can hold the pen for only a short period at a time. But I can at least tell you, that my case proceeds steadily, to my own comfort and surprise, and to the satisfaction of the doctors. I am now lifted out of the region of acute suffering, into that of dogged endurance of quite bearable pain, and

[1] "Macmillan's Magazine," January 1860.

am losing day by day the spectral ghastliness which made me for days look, while sleeping, like a corpse.

"I have no repentance or repining at the step I took, or the loss I sustained. It pleased God, who speaks to some with the still small voice of gentle persuasion, to address me in the whirlwind and the storm, and to vouchsafe me, in the prospect of sore trial, a calmness, even a serenity and patience which could have been supplied me from no other source. I look back on the last month with wonder and speechless gratitude, and place my reliance for the future on the same mighty arm which wrought my deliverance from past affliction.

"When you pray to God, let thanksgiving mingle with *earnest* request that more light, and stronger faith, and greater self-renunciation, and all other needful gifts, may be given to me, still standing on the threshold of Christian experience.

"It's a strange thought, the idea of your foot dying before the rest of you. Well, I'll find it at the resurrection, or, if not, something better. I have likewise been thinking that my mind or soul must be in a more concentrated condition than that of *bipeds*, seeing that it has a *foot* less of matter to encumber it. What thinks your lordship? The receipt for concentration admits of extension; I am contented with the amount in my case. I have no feeling of the want of a foot, and seem still to feel toes, great and small. John Cairns thinks this must arise from a pre-ordained harmony between soul and body!!! Well done, John!

"All that I have already written has been intended to get up the steam for what I now struggle out with, viz., that if, when you held out those magnificent offers about Boerhaave and Turner, you thought that I would generously

decline your kindness, you were, my dear sir, very very much mistaken.

"Your kindly offer made my morning tea and toast taste like very nectar; I told it to my kind doctor, John Goodsir, the moment he came, and asked him; no, he asked me, would I accept the offer? Won't I? was the polite answer. So, my dear Jeems, you're in for them. Boerhaave I have studied in Latin about the thermometer; he'll be of great use to me for my history. Turner is precious also. I will most thankfully and gratefully accept your offered kindness, and will remind you in return that you will enjoy the consciousness of having performed a 'virtuous action.'—Your loving affectionate

"GEORGE WILSON."

"*February* 7, 1843.

"I continually improve, and feel most thankful for my present hopeful state. I strive to let 'patience have her perfect work,' but flesh is weak."

TO MISS ABERNETHY.

"*February* 6, 1843.

"I am sure you will be very glad to see a few scribbled lines from myself to say I am getting better. Although still with aches enough to make a man who had never been ill think himself in a very miserable way, I have come out of such a gulf of pain and weariness of flesh and spirit, that I feel very thankful for being so well as I am, and am back to many of my old tricks, though still but in a rickety condition. I owe you thanks for that refined calf-foot jelly which you so kindly sent me. But in regard to it, I wish particularly to know if you have turned a homœopathist in your medical practice, and were induced to send me that

instead of any other delicacy from a belief that a dose cooked from the foot of one calf would be likely to prove beneficial to the ailing foot of another. If so, I admire your philosophy, and have improved on it, for my diet consists chiefly of the flesh of chickens, to which I have betaken myself, from a remembrance that these worthy animals spend a great part of their lifetime standing on one leg; a feat which, now that I am struck off the list of *bipeds*, I cannot learn to perform too well, and which the infusion of their substance into mine may conduce to make more easy and, as it were, natural to me. . . . . In sober seriousness, I have every reason to be thankful and contented with my progress, and I try to lie as patiently as I can, while the weary days and still more weary nights slowly glide away.

"I can write no more at present, but be sure that though they should chop all the rest of me into little bits, so long as they leave the heart of me untouched, I shall be your unchangeable

"GEORGE WILSON."

While all was going on favourably as to George's health, and hope was once more springing up in the hearts of those around, dark clouds again closed over them.

During the month of April a quiet evening was broken in upon by violent ringing at the bell, and immediately the house was filled by a crowd of people. At first the cause of this was unknown, and only a sense of something terrible having happened, was felt. It was the dead body of George's father they were bringing in. Having left the house some hours previously in perfect health, to all appearance, he was returning in the company of two friends, and had almost reached home, talking with cheerful animation, when sud-

denly he stopped in the street, and in a few minutes life was extinct. The cause was supposed to be aneurism of the heart. There could scarcely be a more touching sight than when George, pale and feeble, entered the room, and passed slowly on crutches through the crowd to the bed on which the corpse had been laid, to see if it were really true, and not a horrible dream. Alas! at such times our hearts *know* the truth, even while the senses try to disbelieve it.

James Russell at once joined the sad circle, and spent a few days with them. On his departure George wrote, according to promise, to report progress: "I may dismiss myself in a sentence," he says, "by stating that I am excellently well, and my foot *mending*, to use a peculiarly expressive phrase."

A few weeks later, a visitor from Glasgow having carried back gloomy accounts to James, he writes re-assuringly, "I am really improving; I was half expecting I should require a touch of caustic from the surgeons, but things are looking so well that, in the meanwhile, I expect to dispense with their tender mercy. I am out every day; yesterday I made a tripodal journey round the Willow Grove garden four times. Can I give you a better proof that I am really recovering? I will hereafter always honestly inform you of my state, but at present I have not seen a surgeon for a fortnight and more, and I have dined out twice within a week.

"I must make fresh claims on your sympathy with me as one involved in the miseries of 'flitting.' Every day reveals some new and more horrible phasis of the detestable crisis we are in. Blankets, table-covers, even carpets, are taking wings to themselves and fleeing away; and I have to keep a watchful eye on my crutches, lest they abscond in company with some migrating grate, and I be 'left lamenting.' I cannot say that I am, like Niobe, 'voiceless in my woe.'

Is it not one of the privileges of a free Briton, and healthful to the lungs (and *spleen*), to grumble, and that loudly too? I liken myself rather to Marius sitting among the ruins of Carthage, presenting to the world, nay, to the universe, the edifying spectacle of 'a great man struggling against the storms of fate.' With what a deep sympathy I read the answer of the colliers to the question, 'Why their houses were so empty of useful household articles?' That 'furniture was an unco fash at a flittin'!!!! There, my dear cousin, is a great idea, which, however, if carried out, would lead to very *naked* results."

The removal alluded to was to the house in Brown Square, which he occupied for the next nine years, its great attraction being that his lecture-room and laboratory were under its roof, and he was able to attend to the duties connected with them, even when prevented by ill-health from going out of doors. To go from his bed to his lecture-room was no uncommon thing for him in the years that followed.

The satisfaction with which the healing of his foot in the month of June was contemplated, was speedily changed to renewed anxiety, on finding unmistakable symptoms of pulmonary affection. He spent the rest of the summer in a secluded retreat, for which he had a great liking, in Jordan Bank, Morningside. Occasional drives, and sitting in the quiet garden (to get oxygen, as he used to say), were serviceable, and he was prepared, when the winter session opened, to resume his professional duties. They were increased by his appointment, with the sanction of the Highland and Agricultural Society of Scotland, as Lecturer on Chemistry to the Edinburgh Veterinary College, and by a similar appointment to the School of Arts. A course of lectures to young ladies at the Scottish Institution on Saturdays, was also begun in November, involving altogether ten

lectures a week. To a sister he writes, November 26 :—

"You will not suspect me of vanity if I tell you a thing or two about my lectures. I have twenty students at my ten A.M. medical class; forty at my twelve o'clock (three days a week) veterinary class; some hundred young ladies at the Scottish Institution; and some two hundred stout fellows at the School of Arts.

"It is sometimes difficult to disentangle the one from the other, and, accordingly, I called the young ladies *gentlemen*, and made them all smile. Last Saturday, however, I took care to write on my notes, at various places, the word *ladies*, to prevent mistakes, and, as I had abundance of magnificent experiments, the bonny lassies looked bonnier, and were all well pleased.

"I shall never forget the first sight of the sea of faces at the introductory lecture at the School of Arts, rising tier above tier, piled to the very ceiling. I cast my eye around for a familiar face, and lighted on uncle's white head, like the foam on the crest of a billow. A dragoon soldier likewise attracted me with his red coat and his mustaches, and I now look instinctively for him. He is a Scots Grey, a fine tall fellow, and must have stuff in him to come there all the way from Jock's Lodge. He takes notes, and is very attentive; I take quite an interest in the worthy soldier. This class is rapidly increasing under my care over its former numbers, and is my favourite class. My great pleasure in it is lecturing to the working people, to whom I may do intellec ual and moral service."

"Whatsoever ye do, do it heartily," was evidently more than ever George Wilson's motto. He could not give a lecture without taking much more trouble than was necessary in preparing for its illustration, and in the School of Arts this was most evident. His lectures were usually

delivered from notes, and a few of those written for this audience, and used for no other, remain as evidence that some of the finest specimens of his powers as a speaker were elicited by this favourite class. The enthusiasm with which they responded was abundantly proved by the band of chemists which then began to form, many of whom have forsaken all else to prosecute this branch of science, both in its scientific and its practical departments; while it would be vain to attempt a calculation of those whose minds were elevated by its study, pursued after days of toil. At one of the introductory lectures, he requested the crowd outside to permit him to pass in. But they, looking round and seeing only a little man in great-coat and cap, indignantly declined, to his great amusement. A laughing assurance that in that case they should have no lecture, soon cleared a passage for him. A grateful expression of the pleasure received, was left each evening (the lectures were once a week) by one pupil, a gardener, in the shape of a bouquet of the most choice greenhouse flowers. This gardener emigrating, he left an injunction with a friend, also a pupil, to continue the offering. It would have gratified them to see the intense pleasure with which, on his return, jaded, from the lecture, he lay on the sofa and drank in their beauty. Nothing beautiful was ever lost on him, and knowing this, many loved to minister to his pleasures; so that in his sitting-room, at every season of the year, there might be found vases of lovely flowers.

This Tuesday evening lecture at the School of Arts was one of the most exhausting duties of the week. "Well, there's another nail put into my coffin," was often a remark made on throwing off his outer-coat on return. A sleepless night almost invariably followed; and Wednesday came to be recognised as a day when his friends might visit him

without fear of disturbing literary work, as lassitude forbade any attempt at it.

In the previous summer, George Wilson's generous nature had been aroused on behalf of his friend Dr. Samuel Brown, whose experiments on transmutation were exciting intense interest in the minds of scientific men. The fifty simple elements, up to this time believed to be indecomposible, he asserted were capable of transmutation, one instance of which he gave in processes for transforming carbon into silicon. Dr. Brown was a candidate for the Chemistry Chair in the Edinburgh University, then vacant, and his success in gaining it seemed to hang upon the confirmation of his new views. Invalid though George then was, he left no stone unturned on his behalf; and in a letter to the Lord Provost, in September 1843, printed and widely circulated, though not published, he strongly advocated Dr. Brown's claims on the Chair, independently of the transmutation experiments. With this preface, we turn to George's letters for information as to his occupations during the session 1843-44, in which he laboured to verify the experiments in question, and which afford an example of devotion to a friend's interest with few parallels, if any, in the annals of science.

In October he laments the absence of his friend Dr. Cairns, who had left for the Continent: "I cannot tell you," he writes, "how much I shall miss you on Sabbath-days. I have not much prospect of being often inside a church this winter, and I feel how great my tendency is to grow languid in earnest devotional feeling when cut off from communion with fellow-Christians. But is not the very isolation from others as much intended for a part of preparatory probation as sore physical agony or mental distress? It must be so, and the conviction that it is, soothes my regret

at parting with you, from whom I have learned so much. You will pray for me, however, and send me a word of advice at times, and I will try to 'let patience have her perfect work.'" Again to the same friend he says:—"December 27, 1843; I sit down to write to you with great shame and confusion of face at the thought of the time that has elapsed since I received your Hamburgh letters; but, in truth, I have been so occupied that I have never had the leisure to sit down to write to you calmly. The repetition of Dr. Brown's experiments has engrossed me day and night, and still occupies my time; and I have been so fatigued with my laboratory work, that when I left it I had no spirit to write you even a few lines. . . . . I have great reason to be thankful for the health I have enjoyed since you left, though it has not been uninterrupted. I had got so far on in the way of limping about on a stick, that I was promising myself a visit to church, and the pleasure of hearing a sermon, when my hopes were disappointed by a fall down stairs, which sprained my knee, and doomed me to bed and sofa for a fortnight, and to another leaf out of the book of physical affliction in which I have lately had to read so many lessons. I have read somewhere, that in the lives of men, if wisely watched, may be discerned the finger of Providence, teaching each by a kind of lesson peculiar to himself; so that on one bodily affliction, on another mental sorrow, on another pecuniary distress falls,—the same kind of trial returning again and again, while the sufferer is exempt from other forms of woe. I have sometimes thought there was a little truth in it, and you can suppose in what way I apply it to myself. But in reality every sorrow bears others in its bosom, and trial in one shape must always be more or less trial in all. This is a foolish speculation, and one I do not seek to indulge in. So long

as I feel every lesson less than sufficient to teach me the patience and faith I so much require, I feel every disposition to look with a cold eye of curiosity on God's dealings with me, at once silenced. I know now enough of the 'peace that passeth all understanding,' to welcome the attainment of more of it at any price its great Giver may afford it to me. Is there not something presumptuous in that expression? There is only humble hope at least in my heart.

"A week has elapsed since I wrote the preceding part of this. . . . Yesterday I received your second letter, on which I would expend much praise, if it would not waste paper. Suffice it therefore to say, that we all read it with pleasure, and that I have no wish you should displace Schelling or Neander in your descriptions, by any of the great *physiker*. I get enough of them, and need accounts of the others to keep my soul from growing altogether one-sided. Judge of this by the life I lead at present. At ten A.M. I descend to the laboratory, where I work till four P.M. driving out, when the day is fine, for one or two hours. The interval between four and six is spent—how do you think?—in sleeping, positively in slumbers, so wearied am I with my day's work. At six I descend again, and remain till nine or ten, and when I come up again, some talk with Mary, a glance at an 'Athenæum,' and I am ready for bed. For the last six weeks I have scarcely got so much as the newspapers read, and have been thankful to secure a chapter of the Bible, and leave all else unread. Much of this labour has been spent on mere drudgework—analysis of soils, wheat, etc. But the chief cause of such working has been the great question of transmutation, at which I may, without any exaggeration, say I have laboured night and day, and laboured, I am sorry to say, to very little purpose. Two of his [Dr. Brown's] cousins, and Mr. Goodsir, besides

myself, are conjointly working at the repetition of his experiments. . . . It is a period of great anxiety to us all, convinced as we are that nothing but the fullest confirmation of his views will obtain for him the chair. . . . . Pray for us, my dear friend, that we may be kept from falling. You comfort me greatly by the thought that you pray for me. I am calm, contented, and cheerful, labouring with a peace I never knew before. . . . ." To a sister he writes about the same time :—"I am better, not yet able to use my leg again, but very busy. I compose a great many rhymes to keep us in good humour down stairs. These you shall be favoured with when you come; they are not carriageable articles. I have got Jamaica soils to analyse at present, and I am seeking for pounded missionaries, and crystallized tears of emancipation-seeking negroes. I have found some of the latter, very like chucky stones."

"*January* 28, 1844.

"I was at church yesterday, and heard a very pleasant sermon. Had it been bad, even very bad, I should have been thankful, but it was the very opposite. We have got James safely among us, and I hope he will improve on our hands. For improvement there is great need, as he is wofully thin and pale, and sorely depressed in spirit, but I look hopefully to his stay with us as likely to be of good service to him.

"I am on the whole well, and having at last got my shoe, am limping about with a couple of sticks. I hobble painfully along in an awkward way, the shoe being far from comfortable ; but as I never indulged extravagant expectations of its gracefulness, I am quite content when I compare my present condition with that of my previous one, mounted on the uncomfortable crutches. In truth, my dear Jessie, if we could learn contentment, we should find it a greater acquisition than happiness, or beauty, or wisdom, or wealth. . .

"God bless you, my dear sister, and watch over you. A sense of His infinite willingness and ability to succour us, and a firm realization of the great truth that His ear is ever open to our prayers, is a precious attainment. For you and for me Jesus Christ died; to know that, and to make it a wellspring of devout gratitude and obedience, is at once a high duty and a great joy."

At this time a great sorrow was hanging over George, as indeed over every member of the household. It was the anticipated death of his cousin James Russell. More than once has this name appeared in the preceding pages, and doubtless much may be gathered of him even from these brief notices. He was one who left a profound impression on all who knew, more especially on all who had learned to love him. So much was this the case, that so late as 1864, his brother Alexander refers thus to him in writing to a friend:—"my dear brother James, twenty years since gone from us, but living still in our memory and affection, retaining, as is the privilege of the dead, his ardent youth in our thoughts; not oldening with time; not losing, as it rolls on, one of the salient features whereby we knew him, and still know, rather than remember him." Growing up, as James Russell did, from the early age of six, in the same household as George, many of the influences under which the latter was formed also affected him. It is not too much to say of him that he possessed genius of no common order; this was manifested in various ways. On quitting the High School of Edinburgh, he left it as its recognized Dux, and at College he was one of Sir William Hamilton's most distinguished students. His love for philosophy was great, and other sympathies were largely developed. He was an excellent classical scholar; had ranged many de-

partments of literature, and he has left tokens that the poetic faculty in him was fresh and strong. His nature was generous, loving, and true, and we wonder not that his very name possesses a charm for those who knew him, and that sweet memories are awakened by thoughts of him.

Disease early laid its hand on him, and at the time of which we now speak, he was sinking in its grasp. In the following letter to a sister, George speaks of him :—

"James is, on the whole, as well as any such sufferer can be, growing daily weaker, and wasting manifestly before our eyes, but free from acute pain, and not much distressed with sickness. Now and then, at long intervals, I have a cheering conversation on the world to come with him, and we talk of many matters quietly together. But often for days we remain beside each other, saying very little about any matter.

"I can now walk the streets alone, trusting to my stick only for support. This is a great deal, like a new life to me. Crocuses and snow-drops and hepaticas are growing old, and tulips and hyacinths flinging forth their flowers. It would sadden you to hear James dwell on the loveliness of green parks filled with violets and buttercups and spring flowers, as on things which he will never see. Where he is going he will see 'better things than these,' and these may not be wanting also. Nothing strikes me more in the Bible than the exulting calmness with which the sacred writers permit us to imagine our utmost as to the glories of heaven, and then add, 'Eye hath not seen, nor ear heard, neither have entered into the heart of man, the things which God hath prepared for them that love him.'

"I write in the laboratory at a moment hastily snatched from other duties. Excuse scrawling, and believe me your affectionate

"GEORGE."

After speaking of his baffled hopes in connexion with the experiments alluded to, which amounted in number, at the lowest estimate, to two hundred, he writes to Dr. Cairns on March 1st :—"But what are all these things, and any amount of intellectual disappointment and grief . . . compared with the sorrow of seeing my poor cousin hopelessly, fatally ill? He is dying before our eyes, and the doctors hold out no hope of amendment. Tubercular disease, phthisis (or to use the plainest word), consumption, has set its fatal seal upon him. It has not yet gone far, but you know that in that disease the beginning is the end. James knows he is dying. In a house full of invalids like ours, with the shadow of the grave always over it, great plainness of speech can be used on such a matter. He is weak in body, but little changed mentally. He speaks and reads very little, spending the day in brooding meditation. But now and then old gleams come out, and from conversation with him I find that the consolations of the gospel are not failing him in his time of trial. I am sure, indeed, that he enjoys as perfect peace as one of his temperament, suffering from his ailment, can do. Pray for us all, my dear friend. What would I not give for you beside us? . . . I shall write very soon. At present I am harassed exceedingly, and can send only this incoherent scrawl."

On the 20th of the same month he gives further proof that James's time on earth will be short, and adds,—"For all this I would have prepared you by an earlier letter, but all my spare time, the very little that remains after my weary, sickening, laboratory work, has been spent for you in another way. I have been copying the essay [by James] on Pantheism, the Trinity, etc., for you. It is addressed to you, and you may consider it his last legacy. . . . Indeed,

I have been so occupied for the last three months, that except on the blessed Sabbath, I have known no intermission,—chasing a Will-o'-the-Wisp is an interminable thing, and you will, I hope, forgive my apparent neglect of you.

"James has lately read, with more interest than he has felt in anything else, a very remarkable work, called 'Life in the Sick-Room, or Essays by an Invalid,' understood, on very good, if not quite certain, grounds, to be the work of Miss Martineau. That lady has been for some years a sufferer, and has now, from her solitude, given to the world her scheme of consolation in trial. The work conveys a far higher idea of Miss Martineau's power and nobleness of intellect and feeling than any of her former works have done. My cousin and I have read it together with great interest and admiration, coupled with the deepest melancholy at the thought that any poor soul should expect to find abiding consolations in the hollow transcendentalisms of her mocking creed. We have rejoiced together, with affectionate sympathy for the writer, that we know an unfailing, inexhaustible source of sympathy as worthy of being applied to, and far more sure and unfailing than, anything the proud human heart can extract from speculations on the essential abidingness of good, as contrasted with the transitoriness of evil, &c. &c. I am becoming absurdly diffuse on this topic, but I will have done. Two of my sisters have been laid up this winter; they are both in bed while I write. This makes a sad household, and drives one to dwell on sources of consolation."

Exactly three weeks after this did the end come, and the next letter gives the sad news to Dr. Cairns:—"When I wrote to you last, I looked for many weeks, at least, as yet remaining. On the day of his death, however, we had all,

himself included, a strange presentiment that death was at hand. He wrote the names of several friends on books that day. In the evening we were all reluctant to retire. Mary and I had secretly resolved (unknown to each other) to remain up all night, and his brother slept beside him. We were reading together [in the next room] the eighth chapter of the Romans, and had nearly finished it, when the sound of his breathing heavily called us to his side, and we had the satisfaction of witnessing him die. His mind wandered slightly through the short period during which he retained consciousness. He was not apparently aware that he was dying, but believed he was about to fall asleep. He spoke, however, with more freeness than usual, though with much physical difficulty; and in answer to our questions referred to his never having, since he went to Glasgow, lost, or ceased to have trust in Christ. He was repeating a conversation he had with Mary that morning, ending with a confession of his ability to throw himself 'humbly' (he dwelt much on that word) on Christ. It was inexpressibly touching to us seeing him dying, and desiring a repetition of his assurances of faith, to be gently (very gently) interrupted by his 'wait a minute.' He would not acknowledge a true conclusion not legitimately arrived at; and when we anxiously repeated to him words of Scripture, he kept quietly on in his own statement, and so lost consciousness.

"It would have been consoling to us to have heard him again repeat his acknowledgments of reliance on God. But it was not necessary to us, and it would argue a mournful lack of faith to let the accident of his dying physical state, which precluded speech, shake our trust in God. I never felt the great privilege of prayer more fully than when I knelt at my cousin's dying bed and implored our great,

sinless, sympathizing High Priest's promised help for him in his last extremity. That it was given I do not doubt. That last and precious verse of the eighth chapter of Romans would alone give me the assurance that it was.

"His death makes a great blank to me—greater, indeed, than that of any other friend of my own sex can make. We have grown up together, physically and intellectually. There were great dissimilarities between us, but we had so much in common that these rather increased our love for each other. I never knew how much I loved him till now, how worthy he was of being loved, how unkind I often was to him. I have tried in vain all last week to get through a little needful work. Had it been hand-work, I could have done it; but I had to think and write, and my mind wandered always to the thought of my dear cousin taken away. I can unburden my heart to you, and confess that I have wept more this week than ever before since childhood, without fearing you will think me less a man or a Christian for that.

"I am now calm, and able to think of James as I should wish ever to do. The thought of him is so mingled with everything I do, that no effort could detach him if I wished it. But I thank God he has made the memory so precious. The presence of a glorified spirit is something only to rejoice in. This is selfish, however. . . . I bear up well, and walk about alone with the help of a stick. I could forget my whole winter's work, willingly and easily, were it not that I feel it was the means of keeping me away from James's side. This will make the thought of last winter full of bitterness. . . .

". . . I thank God devoutly that I was able in this predicament to guide myself by his commandments. Pray for me that I may be able to witness a good confession

beside the watchful sceptics I am among. I could write to you whole reams; fortunately for you, the paper is done."

To a sister:—"We buried dear James yesterday in that beautiful churchyard.' Young trees were budding out, and the grass wearing the bright green of spring, as if to show us how many earthly symbols there are of the 'Resurrection and the Life.' Alick is anxious to have a stone raised over his and Catherine's grave. He got a design of an obelisk, with an urn on the top, which I strongly objected to, and recommended in its place a cross, like those which fill the German churchyards. He was afraid of being suspected of Puseyism, but I smile at that. A cross is a precious Protestant symbol, apart from the follies of Puseyite or Papist. It is in our hearts, however, that his memory must be preserved, and assuredly it will be.

"How much I miss, and shall miss him, I have scarcely dared to think. . . .When I recall his sensitive spirit, however, and how little relish he had for even the most engrossing subjects of this earth, I feel how justly we can say of him, that he was 'taken away from the evil to come.'" And six years later he says, "If I often feel that a fine ethereal genius like his would have done much to exalt and refine my nature, had we lived together, yet life was to him such a bitter, dreary wilderness, that I could not wish him back, whatever might be the gain to me. To die and be with Christ, was for him, above all my lost ones, far better than any career of earthly life could have been."

The purpose of erecting a cross on the grave was carried out, and on it may be seen the names of brother and sister, dying at the same age (twenty-one), in the same month (with an interval of five years), and of the same disease. It was

the Russells' wish to lie in death with those whose life they shared; and as three of them are now at rest there, it may be said of both families, "The greater part are fallen asleep."

In the spring of 1845 George writes to an absent sister:—"This time a year ago our dear James entered into his rest, and all this day our minds have been full of him. All the more, perhaps, that Dr. Wardlaw preached to us this morning, and by many things brought before us the image of him who is now in the presence of God. Mary and I are going to visit his tomb, and you in spirit will be with us beside it, in the quiet corner of the churchyard where it stands. May God give to all of us, through our Lord and Saviour Jesus Christ, a restoration in His good time to our dear cousin in heaven!

"Meanwhile, I would give a great deal if, with these solemn thoughts around me, I could gather all my pupils, some two hundred in number, together, and address to them a word on something higher than anything chemistry can show. I would take for the lesson of the day the thirteenth chapter of 1st Corinthians, and would preach, with the emphasis on the *we*, from the words, '*We* know in part, and *we* prophesy (or teach) in part; but when that which is perfect is come, then that which is in part shall be done away.'"

The sorrows of this winter and spring in no way materially neutralized George's energies; and from each of his Classes a testimonial was presented to him expressive of their sense of the gratitude due for his services. A sentence in a letter reminds us of members of the household, without a notice of which the picture is incomplete:—"All our kith and kin are well, down to Stronach, the beloved terrier, and the absurd cat without a tail." Both these *individuals* were great favourites with George. The terrier accompanied him everywhere—to lecture-rooms; while driving; to the labo-

ratory; to the sofa; and to bed, where he reposed at his master's feet. While he lay on the sofa at supper-time, Strony (as he was usually called) sat on his hind legs and begged for biscuits; and puss (a Manx cat) lay on his chest and patted his mouth to coax bread out of it. Their importunities were a pleasure, as expressive of the strength of their love and trust, and his patience with them was exhaustless.

The summer session of 1844 was opened by a lecture on transmutation, which attracted much attention at the time, owing to its bearing on the new views then under discussion. Dr. Chalmers and Lord Jeffrey were amongst the auditors, and with both of them a lasting friendship was the result. The lecture was afterwards published, with some enlargement, in the "Edinburgh New Philosophical Journal," for July 1844, and in it the whole subject of isomeric transmutation is discussed.

His summer classes occupied three hours daily, besides laboratory duties, so that it is not surprising to find the remark, "I am getting very tired of summer work, and longing for the country. We have as good as settled to return to our old quarters at Morningside. Two ladies, a crow, and one or two cats, are the present inhabitants of the cottage."

A month previously he had told Dr. Cairns,—"I have been baptized by immersion, having satisfied myself that it was the scriptural and most ancient method, and desiring, since I had the choice, to realize as fully as possible in the symbolical rite, the application of such passages as 'buried with Christ in baptism,' &c. But I incline strongly to consider the mode unimportant, and to believe that affusion of water is all that is implied in the idea of baptism. My mind is still quite undecided as to the question of the proper objects of the ordinance, and I look for your assistance in

solving the difficult and important problem when you return." George's parents belonging to the Baptist persuasion, he had not been baptized in infancy, and therefore no choice was now left him except as to the mode. The rite was performed by the friend and pastor of his early years, the Rev. Dr. Innes, for whom he ever retained an affectionate regard. His views as to believers being the proper subjects of baptism became decided in later years, yet with no tinge of sectarianism or bigotry, from which he was unusually free. The early admiration of the Episcopalian form of worship, above that of other religious bodies, passed away with the dreams of youth, and he united himself with the Congregational Church under the care of the Rev. Dr. W. L. Alexander, a union only dissolved by death.

Nearly two months were spent in his favourite retreat, from which we find a letter, dated "Sleepy Hollow," describing its attractions :—"This is a most sweet spot, and no day is more delightful here than Sabbath. I miss the prayers of my brethren much; the sermons far less. Here I have hosts of precentors, who lift up a stave whenever they have a mind, and I never lift staves at them. The blackbirds begin to know me, and a little bird (name unknown), on a tree above my head, sings a *Te Deum laudamus* of three notes, of which I never tire. The delight I feel in gazing at flowers and insects, and watching the trees grow, the shadows on the hills, and the changing aspects of the sky, I shall never be able to make any one understand. I can give it no utterance in words. I am sure, however, that it is innocent, healthful, and though I am slow to use solemn words needlessly, even holy, for this garden has been to me an oratory, such as no other place has been. I spent this forenoon reading the story of Joseph and his brethren, onwards to the end of Genesis. It is long since I read it through, and though no part of the Bible is better known to

me, or more tenderly remembered in connexion with happy childhood (perhaps indeed for that very reason), it moved me almost to tears. I felt the *hysterica passio*, the gulp in the throat, and should have fairly wept had I attempted to read it aloud. The dignity, simplicity, and pathos of the scene have never, I imagine, been excelled, and the wonderful way in which the old romantic story momentarily reveals God himself shaping all its events to the most important but far-distant issues, and yet leaves the human interest in the tale to go forth unchecked by the awe or even sense of the supernatural, struck me to-day as it never did before. I spent two hours, which fleeted away, in reading the account and thinking over it, ending with the grand prophecy of Jacob as to the destinies of his descendants, which always seems to me to resound like the triumphal march of an army going forth conquering and to conquer. For the blessing of Jacob on Ephraim and Manasseh I have another and a more subdued feeling. Many a time, when I was a child, and in early youth, has mother invoked on my head and my twin-brother's, as we slept together, the benediction,—'The Angel which redeemed me from all evil, bless the lads.' That prayer has been answered in full for one of them, who bade me farewell some twelve years ago, in assured hope of a blessed resurrection, and the other rejoices to know that he is the child of many prayers."

A pleasant week, at the close of the holidays, was spent at a farm-house in East Lothian, where he "made the acquaintance of a great many nice dogs," and was touched to learn that his own terrier took his absence sorely to heart, and refused food. "Give the dear beast," he writes, "a taste of cream, or something good, in reward thereof;" and so back to town and to work.

CHAPTER VIII.

LECTURER AND AUTHOR.

"Nihil tetigit quod non ornavit."

"He illuminated the Book of Nature as they did the Missals of old."

In the ten years that follow, we find the most important part of George Wilson's life, so far as literary work is concerned. The amount done seems more befitting one strong in body, than the invalid on whose behalf our sympathies have been excited. But one secret of his unresting diligence lay in the belief that his life would be a short one. "Don't be surprised," he said to a friend in 1845, "if any morning at breakfast you hear I am gone." So with the shadow of death close at hand, he ever worked as one whose days were numbered. At first this seems a gloomy thought, but that to him it was far otherwise we cannot doubt. "To none," he says, "is life so sweet as to those who have lost all fear to die."[1] They who have large store of health and strength are apt to lavish them thoughtlessly on various objects, but such as he, husbanding their strength for work alone, are frequently able to realize what their stronger brethren only dream of.

From this period to its close, his life was one long sacrifice of pleasure to duty. While lecturing ten, eleven,

[1] "Life of John Reid," p. 264.

or more hours weekly, sometimes with pulse at 150°, it was frequently with torturing setons and open blister wounds; and every holiday was eagerly seized for the application of similar "heroic remedies," or "bosom friends," as he named them. His keen appreciation of the pleasures of society, and of all beautiful things, was sternly put aside to meet professional claims; and all with such quiet simplicity or gay good humour, that few if any guessed the price at which his work was accomplished.

"I should have been to see you," a note at this time says, "but a cold has damaged my bellows a little, and I have had to put a *comforter* on the *chest* in which they are kept." And before the opening of a winter session, he writes to a fellow invalid, "I'll wager you'll get through the winter with less croaking than I will. I was wondering this morning, as I looked at my collar-bones, how soon they would have a blister occupying the valley below. You have not, like me, to turn 'stump orator' for six months in the year; and talk, talk, talk till your tongue cleaves to the roof of your mouth; however, I hope we'll both fare well. To be well enough to work is sufficient, and quite satisfies me." "One whole day in seven spent in talking out loud," he says again, "makes that prophecy comforting, 'Whether there be tongues, they shall cease.'"

Besides the systematic course of lectures, given each session to his several classes, there were occasional series of popular lectures. The greater number of these were delivered before the Philosophical Institution,[1] Edinburgh, with increasing acceptance on each occasion. The subject of the first course was, "The Chemistry of the Gases," and part of the Introductory Lecture appeared shortly

[1] The title, in its earlier years, was "Philosophical Association," and the lectures were delivered in the Waterloo Rooms.

afterwards in a periodical of the day, with the title, "The alleged Antagonism between Poetry and Chemistry."[1] Professor Goodsir at the same time gave a short popular course on Human Physiology,—he and George Wilson lecturing alternately. It was on one of these chemical evenings that the pet terrier made his last appearance at a lecture. Stronach having died and left a blank in the household, Alexander Russell brought a successor, that in due time became as great a favourite, and, like Stronach, accompanied his master everywhere. He was named Grim, and one evening in the Waterloo Rooms, he astonished the attentive audience by pushing aside the green baize hanging from the table, and with shaggy head and paws visible, gazing with wonder at the assembly before him. The effect was irresistibly comic, for it seemed as if, in imitation of his master, he had thoughts of setting up on his own account. But poor Grim never had another chance of winning public confidence, being compelled henceforth to spend the evenings at home, listening for the step of him he loved so well.

Within the decade now under notice, several courses of lectures were delivered under the auspices of the same Institution. The prelections usually delivered to its members differ widely from those addressed to most popular assemblies. The audience which it calls forth regularly throughout each winter, is one that might stimulate any lecturer to put forth his best powers. High efforts of such men as Ruskin, Kingsley, Hugh Miller, and many of like eminence, have been elicited by it, and not a few works of value have resulted from the publication of lectures given either in whole, or in part, to the members of this Institution. A favourite lecturer, such as George Wilson proved

[1] See "Torch," pp. 13–16. Sutherland and Knox, Edinburgh, 1846,

to be pre-eminently, is sure to attract a large number of intelligent, educated, and critically appreciative listeners. To address audiences so intelligent and so courteous, was a source of gratification, affording an arena on which his powers had wider scope than the limits of his ordinary field could give.

Few can estimate the amount of forethought and trouble which a popular scientific lecture, illustrated by experiments, entails: but so far was Dr. Wilson from grudging this trouble, that he invariably prepared for each evening, and with the greatest care, more than could be delivered, and received convincing proofs of appreciation in the unwavering attention of his hearers, even sometimes for an hour and three-quarters. An hour before he began, seats were eagerly secured by them, and from half-past seven till ten have they frequently been in attendance, night after night. To him these lectures involved loss of sleep and appetite, such as made them the most injurious to health of all his labours. A list before us of fifty-two items, required for the illustrating experimentally of one lecture, testifies to these facts, while the more elaborate of his prelections were, one might soberly say, so much of his very life told out. Almost invariably were they followed by sharp illnesses, yet not the less was he willing to undertake the duty again and again.

After his death the following reference to a published lecture was given in writing to his sister: "While glancing at the paper, I remembered the very sound of many of the expressions as I heard them, and how vividly I can recall his look while lecturing those times I went with you, and the great clear profile cast on the wall by the electric light! All the brilliance and the beauty of the mind, with its thoughts, we can't, in looking back, feel *them* past; only the

cough after he got into the carriage—oh, Jessie! what a contrast it made at the time, and now, that part is over for ever." One of our gifted men of letters, Dr. W. B. Hodgson, in a letter of January 1860, speaks of the "element of childlike wonder which animated George Wilson, and which he so well knew how to transfuse into others, or rather, which he transfused into others without knowing how, and by the mere force of sympathy. In listening to Wilson, you not only increased your knowledge, your store of facts, but you were delighted with the beauty and harmony of their relations and interdependence; and few indeed are the sermons that can leave so deep an impression of reverence for Him whose works science interprets, as did the simplest of George Wilson's compositions. There was such a charming play of fancy about his lectures, adorning but never obscuring the accuracy of his observations, or the close method of his arrangement. . . . He was one of the most learned of our men of science, at once the most practical and the most poetical, the most attractive lecturer and effective teacher; and never did a purer, gentler, kindlier being exist in human shape."

"In his hands," Professor Macdougall[1] remarks, "every subject was felt to become not intelligible only, or even interesting, but almost enchanting. The value and attractions of knowledge were not merely understood, but intimately felt and appreciated, when exemplified in the joyous activity and happy dispositions of one, who drew so evidently and so largely from knowledge the aliment of his energies, and the materials of varied and exquisite enjoyment."

In the spring of 1846, he was requested by the Young Men's Society to give a short course of lectures on the "Relation of Physical Science to the doctrines mooted in

[1] Professor of Moral Philosophy in the University of Edinburgh.

the Vestiges of the Natural History of Creation," in order to counteract the views promulgated in that work. Speaking of those lectures, he says to Dr. Cairns, in a letter of July 11, 1846, "I have too much wrought only at science and literature, hoping thereby to secure a position which would enable me to serve Christ effectually. But many things warn me that my life will be a short one, and that what I can do, must be done swiftly. Here there seems some slight opportunity of doing a little good, and I must not willingly let it pass, or mar it." The lectures were largely attended, and attracted considerable notice at the time. Offers were made by six publishing houses to print them without delay. He felt averse, however, from their appearing permanently in the polemical form, and put them aside to be reproduced at a time of leisure, which never came. The severe illness, indeed, induced by the additional labour they gave, made some months of quiet rest in the country indispensable, and fresh literary work pressing on him soon absorbed every leisure moment.

Occasional lectures in provincial towns were delivered, the number of such requests being truly legion. Of one in Dunbar, in 1846, he says, "From what I saw of the people who attended it, I am satisfied that single lectures are out of the question to miscellaneous audiences, so far as rational instruction is concerned; nor is it possible to offer a prelection which shall be equally suitable to little boys, young ladies, elderly ditto, clergymen, doctors, farmers, tradesmen, and working people. The thing is preposterous. The utmost that I believe is, that the lecture would do them no harm."

To no appeals for aid was a more ready assent given than to those from struggling home-mission workers, Sunday or apprentice schools, &c.; and the careful arrangement of

illustrations for these lectures compelled the thought that this was work specially done for the unseen Master. The last of these appearances in the summer of 1859, is now thought of with the interest that clings to such unconscious farewells. To Dr. Cairns he sent the following report of it:—"A few nights ago the young women at it [a Bible class] were invited to a festival, where tea, strawberries, and a lecture on light, got up, 'regardless of expense,' with specimens, balloons, blue lights, and what not, were furnished. A well-known 'Prestidigitateur' took charge of the 'spectacle,' and the whole affair was a great success. Some liked the tea, and some the pictures: some the strawberries, and some the balloon. A few 'general hearers' liked everything. . . . . I took more trouble with the *fête* than I have done with almost anything, and rejoiced much in its successfulness. May the omen be blessed! May He, for whose sake the work was done to interest the little ones of His flock, feed me and lead me as one of His sheep once far astray, but now admitted by the door into the true fold!"

In 1852 he speaks of a similar occasion to his friend Mr. Charles Tomlinson. "I am much interested in your Vauxhall doings.[1] I know how pleasant such work is. I had more pleasure in two lectures (on the Chemistry of a Candle), to two ragged schools this winter than in most of my other lectures. At one of them a very excellent dissenting minister,[2] who is the mainspring of a most beneficent system, came up to me before the lecture commenced, and said apologetically, 'We generally begin with prayer; have

[1] The reference here is to a lecture given by Mr. Tomlinson, to supplement the benevolent labours of the Messrs. Wilson, in the Belmont Candle Works, on behalf of those employed by them.

[2] The Rev. James Trench. See Cairns's "Memoir of John Brown, D.D." p. 262.

you any objection to our doing so now?' I at once said, 'No;' and he offered up (what Scotch prayers on *such* occasions are not always) a brief, expressive, singularly appropriate prayer, in which he prayed for me *as a chemist.* I cannot tell you how I was touched. I said in my secret heart, 'I'll give him another lecture for that.' We chemists are generally held to be men who, provided we can tell ink from blacking when asked, do not require moral characters. No doubt, we get our share of the prayers for all sorts and conditions of men, but I want something more. The day I hope will come when, without cant, or formality, or hypocrisy, a class and its teacher will together ask God's blessing on their work before they begin. If we can't be Christians in all our daily work, of what worth is our Christianity?" It may be imagined what excitement such a lecture occasioned amongst the inhabitants of the close or wynd in the High Street of Edinburgh, in which it was held. Going down on one of the evenings, an hour previous to the opening of the door, to make preliminary arrangements, the lecturer found little boys endeavouring with intense curiosity to peep through every crevice of door or window. Seeing him enter elicited from one the pathetic petition, "Eh, man! will ye no let us in?" but a more shrewd companion observed, "That's no a man; that's a gentleman!" In due time they did get in, and next day were overheard by the assistants who came to remove the apparatus used, dilating to their companions at the mouth of the close, on the wonders they had seen. "And, man!" said one, "he fired a glass pistol fu' o' naething; an' he set up a balloon, an' they were a' haddin' on t' it!!!" The description of the explosion George ever remembered with keen zest.

Many and various were the contributions to science during the years of which we speak. A list of them will be

found in the Appendix. To one of the first,—"On a simple mode of constructing Skeleton Models to illustrate the systems of Crystallography," the Royal Scottish Society of Arts awarded a medal of five guineas' value, believing the invention likely to be of much service. Before the same Society a paper was read in 1845, "On the employment of Oxygen as a means of Resuscitation in Asphyxia." In 1848 he brought before it "Suggestions on the use of the Electro-Magnetic Bell in conducting Sound;" and in later years, 1853 and 1854, his series of Researches on Colour-Blindness, for which the Society conferred on him the highest honour, the Keith prize, value £30; and in addition a grant of money, to be expended on the inquiry, was placed at his disposal. In 1855 the Researches were published,[1] with some additions, and form a valuable contribution to previous investigations on this subject. None of his inquiries attracted so much attention as these, probably from their bearing so widely on the welfare of the public. They are referred to with commendation by Dr. W. C. Henry, in his "Life of Dalton;"[2] by Professor Clerk Maxwell, of Aberdeen;[3] by Professor Tyndall, of the Royal Institution, London;[4] by W. Pole., Esq., C.E.;[5] and by Dr. J. H. Gladstone.[6] Sir David Brewster, in a recent paper on Colour-Blindness, speaks of the Researches as a "very interesting volume." It is thus more fully referred to in an elaborate article, by Sir David Brewster, who discusses its

[1] "Researches on Colour-Blindness, with a supplement on the Danger attending the present System of Railway and Marine Coloured Signals." Sutherland and Knox, Edinburgh.

[2] See Appendix to "Life of Dalton," by Henry.

[3] "Trans. R. S. E." vol. xxi. p. 284.

[4] "London and Edinb. Phil. Mag." vol. xi. p. 329.

[5] "Trans. R. S. for 1859," p. 323.

[6] "Report of Brit. Assoc. for 1860."

contents, in the "North British Review" for 1856: "Although Dr. Wilson himself modestly regards his work 'only as an imperfect contribution to the history of a remarkable, and by no means rare peculiarity of vision, requiring for its full elucidation a profounder acquaintance with optics, anatomy, and physiology, than he dared pretend to,' yet we have no hesitation in recommending it to readers of all classes as a popular work of great value, exhibiting no deficiency of optical, anatomical, and physiological knowledge, analyzing faithfully, and criticising candidly, the labours and views of preceding writers, and calculated, as he himself trusts, 'to create, or deepen the conviction that the study of colour-blindness will throw light upon intricate departments of scientific optics, anatomy, and physiology,' whilst it has 'already an important bearing on the æsthetic arts, which express beauty by colours, and on those economic arts, such as mapping, but especially signalling, in which colours are graphically employed.' . . Though Dr. Wilson has already taken a high place among the distinguished men who adorn the colleges of our northern metropolis, his work on colour-blindness will add greatly to his reputation."[1]

Professor Cherriman[2] also reviews this work at great length in the "Canadian Journal" for March 1856, and concludes "with hearty thanks to Dr. Wilson, both for his own experiments and researches in this obscure subject, and for having embodied all that is known about it in a clear and concise *rêsumê*, which will serve as a standard of reference hereafter to the scientific investigator."

In September 1857, an ophthalmological congress was held at Brussels, attended by men of eminence from all parts of the world, and it was confided to Mr. White Cooper, of

[1] "North British Review," February 1856, pp. 327, 328.

[2] Professor of Natural Philosophy, University College, Toronto.

London, to draw up a report on the present state of ophthalmic science in England. So deeply impressed was he with Dr. Wilson's work, that he expressed his opinion of its value in the following terms :—"Though I have abstained from making special reference to books, I cannot pass over the admirable and original work on chromato-pseudopsis, or colour-blindness, by Dr. George Wilson, of Edinburgh. For acuteness and originality, this volume deserves the highest praise." The opinion thus expressed was indorsed by all present who had studied the subject.

From 1846 onwards to 1852, a series of researches on Fluorine was carried on, involving much patient investigation and laborious inquiry. Its presence was discovered in waters, in minerals, fossil remains, plants, and animal secretions. In the English translation of "Lehmann's Physiological Chemistry," by Professor G. E. Day, special reference is made to them.[1] With one or two exceptions, the papers containing a record of those investigations were brought before the Royal Society, Edinburgh, and have a place in its Transactions.[2] The last notice of the subject was one claiming priority, because of a communication made to the French Academy in 1856, by M. J. Nicklés, entitled 'Présence du Flùor dans le Sang,' this gentleman being unaware, apparently, of Dr. Wilson's announcement of the same fact in 1850.

Before the Royal Society of Edinburgh were also brought, in 1848, the results of eight months' inquiry into the bleaching powers of certain gases; and in the following year the 'Early History of the Air-Pump in England.' In 1845, he read also here, "On Wollaston's Argument from the Limitation of the Atmosphere, as to the Finite Divisibility of

[1] Vol. i. p. 425.—*Cav. Soc.* Published 1852.
[2] See Appendix.

Matter;" later, "On the Organs in which Lead accumulates in the Horse, in cases of slow poisoning by that metal;" and in 1850, "On the possible Derivation of the Diamond from Graphite and Anthracite;" while on another occasion he brought forward attempts to trace the source of Nitrogen in Plants.

Phenomena of vision, encountered while prosecuting the researches in colour-blindness, led to observations "On the Extent to which the received Theory of Vision requires us to regard the eye as a Camera Obscura," which may be consulted with advantage by those interested in physiological pursuits. It bears the impress of that careful thought and accurate reasoning which characterise all his writings. Of one or two other papers presented to the Royal Society, Edinburgh, notice will be found elsewhere.

Before the Chemical Society of London were brought "Inquiries into the Decomposition of Water by Platinum;" the "Binary Theory of Salts;" and "Some Phenomena of Capillary Attraction."

Besides the more strictly scientific labours, of which some notice has been given, he found time to draw up a series of essays for the "British Quarterly Review," between 1845 and 1849, which have justly been reckoned as successful as anything he ever wrote. "The paper on Chemistry and Natural Theology boldly grapples with the difficulty arising from the presence of evil as well as good in the manifestations of design, and contains a vivid reflection of his own experience of suffering; while the scientific memoirs on Dalton, Cavendish, Black, Priestley, Wollaston, and Boyle, show a range of reading and a power of elucidation not often combined in the treatment of any science."[1] After reading some of them, Lord Jeffrey wrote to a friend, saying,

[1] "Macmillan's Magazine," January 1860.

"They give me a very high opinion, not only of Dr. Wilson's talents and learning, but of his taste and power of writing. . . . His severer style is admirable, and nothing can be better than the lucid and energetic brevity with which he abstracts facts and condenses arguments." Those papers were the first expression of that love for biography, afterwards so manifest. "My own favourite study, I will confess," he tells the Rev. Dr. Vaughan, editor of the Review, "is scientific history and biography." He had it in contemplation to write the lives of the distinguished chemists of Britain, and of this work these memoirs were to form part; but the design was never fulfilled, his plans being always more extended than his opportunities of carrying them out. The nucleus of another of his bright visions is to be found in the paper on Chemistry and Natural Theology. The hope of writing a "Religio Chemici," corresponding to Sir Thomas Browne's 'Religio Medici,' was indulged for many years; but "his life—bright with rare virtues—was the only 'Religio Chemici' given him to finish. This was higher than the contemplated work."[1] The "British Quarterly Review" was struggling into being when he was requested to contribute to its pages. This organ being the representative of the Congregationalists of Great Britain, he willingly responded, and by his zeal on its behalf, as well as by his articles, he contributed not a little to its success, identifying himself thoroughly with its well-being.

In the notices called forth by the appearance of its first numbers, we find his paper on Dalton specially mentioned. "The scientific strength of the Review is indicated by a truly admirable paper on the 'Life and Discoveries of Dalton,' in which the atomic theory of that great lawgiver of quantitative chemistry is expounded with a clearness,

[1] "Macmillan's Magazine," January 1860.

precision, width of view, and philosophic eloquence, which reminds us of Playfair, and in which the whole question of Dalton's merit as a discoverer is, through original research, placed in a new point of view, by tracing the independent and altogether peculiar course of inquiry by which he was led to his atomic hypothesis." "'The Life and Discoveries of Dalton,' one of the greatest of English chemists, is treated with a learned appreciation of the subject. It is one of those delightful essays which serve to open the lights of science upon the uninitiated, without dazzling them, or deterring them with too abstruse details."

His "Text-Book of Chemistry," which forms one of the volumes of "Chambers's Educational Course," was written to dictation in the summer of 1849, in the "Sleepy Hollow" of Morningside. Rheumatism was an unfailing visitor in summer, frequently affecting the arms to a painful extent. In that year it compelled the abandonment of spring classes, and this Text-book was undertaken as the only work of which he was capable at the time, idleness being to him an impossibility. He was quite unable to hold a pen for months, and dictated its pages to a sister while pacing the room with compressed lips, that showed the pain could scarcely be endured; but pain never stopped work, and the success of the book has been such as to repay the effort abundantly. Its sale has been at the rate of 2,500 copies yearly, and upwards of 24,000 copies, in all, were sold in the nine years immediately following its publication. It has been recommended, by the Council of the Society of Arts, London, to the students preparing for examination for its certificate of proficiency, and has met with general acceptance. It is thus noticed in periodicals of the day: "There are few books on chemical science in our language which so fully explain its leading features. . . . His little

work may be studied as a choice example of scientific literature."[1]

"Dr. Wilson's work is intended as a simple introduction to chemistry for the youth of both sexes; but it deserves a higher place than the author claims for it, from the excellence of the spirit in which it is written. Most works of the class attempt to do no more than to give an account of the strange and striking phenomena of the science, and rarely venture to discuss its principles; but Dr. Wilson has entered with considerable fulness, and in a remarkably clear, simple, and intelligible manner, into the general doctrines of chemistry, and has explained many matters which are generally, but as we believe erroneously, considered too abstruse for the popular student."[2] A second edition was desired by the publishers in 1857, but engagements on hand put it out of his power to give attention to this request, as considerable additions would have been necessary, owing to the progress of chemistry since its first appearance.

In 1851, the growing reputation of Dr. Wilson, both as a scientific writer and a biographer, was greatly enhanced by his "Life of the Honourable Henry Cavendish."[3] Eight years previously, while laid aside from active work, he had begun to collect materials for the Lives of British Chemists, already alluded to, and these were found of service in this arduous undertaking. He had also had unusual opportunities of mastering the difficulties connected with the discovery of the composition of water, and the claims of

[1] "Athenæum," January 4, 1851.

[2] "Edin. Monthly Medical Journal," December, 1850.

[3] "The Life of the Honourable Henry Cavendish, including abstracts of his more important scientific Papers, and a Critical Inquiry into the Claims of all the alleged Discoverers of the Composition of Water." London: Printed for the Cavendish Society, 1851.

Watt and Cavendish in respect to it. It was at the request of the council of the Cavendish Society—which includes nearly all the chemists of the country, and many of its natural philosophers—that Dr. Wilson undertook this biography, and how thoroughly he identified himself with the subject of his memoir, we find from a letter written while engaged in the work: "I read all biographies with intense interest. Even a man without a heart, like Cavendish, I think about, and read about, and dream about, and picture to myself in all possible ways, till he grows into a living being beside me, and I put my feet into his shoes, and become for the time Cavendish, and think as he thought, and do as he did." It was no light task he had undertaken, and at its close his feeling was, "Had I foreseen the labour and time it was destined to occupy, I should have declined it. A burden is now off my shoulders, which has lain on them for some two years. I never wrote anything with less freedom and unction than this book, for reasons which the preface will explain. Much of it has been dictated even in my laboratory, in the midst of confusion, and the style is horribly rough and rugged in many places. The book will be a very *dry* one, in spite of all the water in it. I look upon the whole with a remorseful conviction, that I cannot answer to God for the expenditure of so great an amount of time and thought on so small a matter. To me, however, the past is always bleak and dark."

Spontaneous help was unexpectedly received from Mr. Charles Tomlinson, London, who furnished many of those graphic details that make this remarkable man stand out vividly from his fellows. The friendship thus originated with Mr. Tomlinson proved deep and lasting. The long-debated question of priority as to the discovery of the composition of water, seems by this volume to have been

decided by public consent in favour of Cavendish. Any lingering doubt was met by Dr. Wilson in a communication to the Royal Society in 1859, in which he says,—"From De Luc's 'Idées,' all trace of charge against the fair dealing of Cavendish has vanished. Lavoisier is found making full, if somewhat tardy, amends for any wrong he did the English philosopher; and as De Luc and Lavoisier testify that Cavendish had reached his famous discovery in 1782, the most uncharitable must cease suspecting that he borrowed or stole it from Watt, who had it not to offer any one till 1783."[1]

The book as a whole has met with a hearty welcome; it has been spoken of thus:—"Admirable as a biography—full of life, of picturesque touches, and of realization of the man and of his times; and, moreover, thoroughly scientific—containing, among other discussions, by far the best account of the great water controversy from the Cavendish point of view."[2] It received public commendation in the address delivered to the British Association in 1855, by its President, the Duke of Argyll, and is repeatedly quoted and referred to by Professor J. D. Forbes, in his "Dissertation on the Progress of Mathematical and Physical Science since 1775 to 1850." He speaks of it as "a valuable biography, which has been printed in the series of publications of the 'Cavendish Society,' and thus unfortunately has had but a limited circulation."[3] For fnrther notice of this work, the reader is referred to the periodicals whose names are given below.[4]

[1] Published in the "Athenæum" of April 30, 1859.

[2] "Horæ Subsecivæ." Second Series, p. 107.

[3] Only members of the Society named are entitled to its publications.

[4] "British and Foreign Medico-Chirurgical Review," April 1852, p. 533. "North British Review," Feb. 1856. In Littell's "Living Age," No. 384,—a Boston, U. S. publication:—a notice of some length is reprinted from the "Spectator."

G. W.

The work which next proceeded from the pen of "the much-loved biographer," as George Wilson has been called, was as different from its predecessor as two books could well be. This difference, however, existed only in the subjects of memoir, not in the method of treating them. Approaching the man in both cases without preconceived notions of what he ought to be, and discovering with fine instinct the springs of action in each, he, with reverential faithfulness and exquisite delicacy, portrayed him as he existed.

Dr. John Reid, of whose "Life" we now speak, was little known beyond the professional circles in which his physiological researches were highly valued, until the later years of his life,—"comprising more tragical incidents, and exhibiting finer efforts of heroism, than are often to be found in real or invented tragedies,"—revealed to the world the qualities of heart and mind that made him a wonder to many. Though not an intimate friend, George Wilson enjoyed the pleasure of John Reid's acquaintance, and on his funeral day, when visiting the picturesque churchyard which surrounds the venerable ruins of St. Andrews Cathedral, tender reminiscences shaped themselves into the following lines :—

THE LATE DR. JOHN REID.

DEATH has at length released thee,
Thou brave and patient one!
The unutterable pangs are past,
And all thy work is done.

Thou wert a Daily Lesson
Of Courage, Hope, and Faith;
We wondered at thee living,
And envy thee thy death.

Thou hast gone up to Heaven
All glad and painless now;
The long-worn look of anguish
Has left thy noble brow.

Thou wert so meek and reverent,
So resolute of will,
So bold to bear the uttermost,
And yet so calm and still.

We think of thee with sorrow,
Thy sad untimely end;
We speak of thee with pity,
Our sore-tried suffering friend:—

We cheat ourselves with idle words,
We are the poor ones here;
Sorrow and Sin and Suffering still
Surround our steps with fear.

Our life is yet before us,—
The bitter cup of woe,
How deep it is, which each must drink,
No one of us doth know.

The Shadow of the Valley,
Whose gateway is the tomb,
Spreads backwards over all of us
Its curtain cloud of gloom.

Some stand but at the inlet,
And some have passed within,
O'er all the shadow hourly creeps,
And we move farther in.

Thou art beyond the shadow;
Why should we weep for thee,
That thou from Care, and Pain, and Death,
Art set for ever free?

Well may we cease to sorrow;
Or, if we weep at all,
Not for thy fate, but for our own,
Our bitter tears should fall.

'Twere better still to follow on
The path that thou hast trod,
The path thy Saviour trod before,
That led thee up to God.

These were printed shortly after in the "Monthly Journal of Medicine," for September 1849, and by their truthful beauty impressed many of Dr. Reid's friends with the conviction that to their author alone could the preparation of a fit memorial of him be intrusted. With what feelings he responded to their urgent solicitations, we learn from various letters of that period. "I can sincerely say that I have no personal end in view in undertaking the sketch. My hands are full of work, and only the hope of preserving a most estimable man's memory from untimely oblivion, and his character from misconception, would induce me to engage in the task. His death and latter days were believed to have made a profound impression on the profession, one such as no death in my remembrance has made on medical men." "His life was so completely one into which hundreds of medical men can enter, and the example of which, they cannot refuse as lying above and beyond their sympathies, that it commended itself to me as peculiarly deserving to be recorded." The great matter to be illustrated is, "the eminent Christian example which Dr. Reid's later days afforded to all men, but especially his professional brethren, who so much need to be reminded of the claims of Christianity upon them. To dwell upon this would be to myself a labour of love. It has fallen to my own lot to sit by the sickbeds and deathbeds of many near relations and friends, and to have deeply impressed upon me what the power of Christianity is to sustain under protracted suffering and the approach of death. I have more than once been at the brink of the grave myself, and was led to see the need of a Saviour, and to experience that He is mighty to save, at a time when recovery was very doubtful. I have supposed that, in consequence of these things, I could better enter into Dr. Reid's conflicts and triumphs than many could. . . .

I have a great delight in the study of men's lives." "I promise myself an amount of personal gain from the contemplation of such a life as John Reid's was, that will amply recompense me for any trouble. To promise this is presumption; I should rather have said that I pray for God's blessing to myself and others in connexion with the undertaking, and already have cause to thank Him that He has put it into my heart to take up the matter. Let not your prayers, my true friend,[1] be wanting; for nothing but His help will enable me to write serviceably a sketch which will be keenly criticised, and better not written at all, than so as to do no service to the cause of Christ. I have not the fear of man before me, but I have the fear of my own unworthiness, and a sense of responsibility often dispiriting."

Many remonstrances were made to him as to the undesirableness of giving the "Life" a religious cast, but he followed out his own convictions of right as to this; and looking back at the close of his work, he says, "It was written with prayers and tears, not to procure me fame or wealth, but to do good." Though published[2] a year later than the "Life of Cavendish," the two were on hand at the same time. The first-named being the volume issued for 1851 by the Cavendish Society, he was compelled to finish it within a given time, and not until the winter of 1851–2 was he able to devote his scanty leisure to the completion of Dr. Reid's Memoir. An extract from a letter referring to the employments of heaven, will be read with interest: "I exceedingly like the allusion to the continuation

[1] This letter is addressed to Dr. Cairns.

[2] "Life of Dr. John Reid, late Chandos Professor of Anatomy and Medicine in the University of St. Andrews." Edinburgh: Sutherland and Knox. 1852.

of physiological studies in the world to come, which seems to have been suggested by Dr. Carpenter, and welcomed by Dr. Reid. Religious men of science too little refer to their studies as not destined to cease with their lives. I do not know why it has been left to Unitarians to insist on this, but so it is; and Dr. Priestley is the only chemist who has expressed his conviction that the study of God's works will proceed under His guidance in heaven. This has always been a favourite belief with myself, and I rejoice to see that Dr. Reid looked forward to prosecuting his acquaintance with the works he had begun to study on this earth. I doubt not that he looked to heaven as a place of holiness far more than as a temple of knowledge; but the spirits of the just, I cannot doubt, feel no such difficulty in combining faith and reason, moral purity and intellectual labour, as we do. A dying minister, quite ignorant of physical science, said to a brother who made it a great study, 'Samuel, Samuel! I'll know more of it in heaven in half-an-hour than you have learned all your life.'"

For the wonderful story of Dr. Reid's gradual preparation for entering on those nobler heavenly pursuits, we refer the reader to the volume itself. The nature of his disease, and the sufferings entailed by attempts at cure, may form an obstacle to its perusal in the minds of many, but the lessons it bears for each one, richly repay an effort to overcome the natural shrinking from painful topics. Care has been taken to make it acceptable to the general as well as the professional reader, by the omission of technicalities; and as the interest it inspires is founded on sources connected with no passing events, it will probably continue to hold a high place amongst biographies. Much in it reveals the inner life of the writer, and thus there may be recognised "the vivid lines of an autobiography painted on

another canvas." In it, too, is to be found a specimen of his skill in popularizing a difficult subject, while describing the nervous system, to which Dr. Reid had devoted much of his research. Abundant evidence was given to the author that his aims in writing Dr. Reid's "Life" had been fulfilled. Private letters from medical men and others show that they who sow in tears, bearing precious seed, return bringing their sheaves with them. The journals of the day contained notices highly favourable, with one exception, viz. the "Westminster Review," which took deadly umbrage at its religious tone. From the author of the "Life of Cavendish" this periodical hoped for better things; but over the general public, especially the religious portion of it, nothing that George Wilson wrote exerted a power so winning as this book. A second edition of it has been issued.

In 1852 there also appeared in the "Traveller's Library" of Messrs. Longman, the reprint of an article, written at the request of Lord Jeffrey for the "Edinburgh Review," on "Electricity and the Electric Telegraph."[1] On its first appearance, this article was generally received as the most clear and vivacious exposition of the subject that had been issued, and considerable additions were made before its separate publication. Lord Jeffrey speaks of it in a private letter as an "admirable paper, giving a luminous account of the invention" of the telegraph. A notice of the first edition says, "If any one is destined to open up a royal road to science, it is Dr. Wilson. He is quite matchless in his use of felicitous illustrations, while the hearty, off-hand way in which he carries us along with him, makes us forget that he is dealing with the most abstruse mysteries of science. It

[1] "Electricity and the Electric Telegraph, to which is added the Chemistry of the Stars." Longman and Co.

is seldom that we find a man so eminent in science retaining all the warmth and freshness of humanity about him. He clothes every subject he touches with the bright hues of fancy and the warm sympathies of a human heart." [1]

In addition to this essay, there is in the volume one originally published in the "British Quarterly Review," entitled "The Chemistry of the Stars." It is an endeavour to determine the extent to which we can ascertain the relative difference of chemical composition between the earth and the heavenly bodies. The learned author of the "Plurality of Worlds" says of it: [2] "Dr. George Wilson has, in his lively tract on 'The Chemistry of the Stars,' made some very ingenious reflections, tending to show that the earth, the planets, the stars, and the sun, are probably very different from one another."

This essay has somewhat puzzled critics. One is disposed to call it "a scientific *jeu d'esprit;*" another thinks it "an ingenious and eloquent argument respecting the stars and their inhabitants, exhibiting the characteristic marks of Dr. Wilson's writings—great clearness, force, and originality of style, with uncommon felicity in the selection of homely and apt illustrations." A third reminds us that its precedence of the "Plurality of Worlds" gives it a claim to the notice of those who study the discussion which followed the issue of that work.

In a second and revised edition of this number of the "Traveller's Library," in 1858, there is inserted a description of the Atlantic Cable, with verses entitled "The Atlantic Wedding Ring," which appeared first in "Black-

[1] The article on Electricity, as it appeared originally in the "Edinburgh Review," is reprinted in Littell's "Living Age," No. 290, December 1849. Boston, U.S.

[2] Preface to Third Edition, p. viii.

wood's Magazine." Two unexpected tokens of admiration of those verses speedily reached their author,—one a translation of the poem into French, and the other, a request from the conductor of the Hull Vocal Society, for permission to set a portion of it to music in the form of a cantata.

The last of George Wilson's publications in this busy year was a pamphlet, called forth by the occurrence of a vacancy in the Chair of Chemistry in the University of Glasgow, by the death of the learned and renowned Dr. Thomas Thomson. Its object was to set forth the needless obstacles which the Scottish University Test Act placed in the way of those who, like himself, could not conscientiously sign the Confession of Faith and the Formula of Obedience. The test had been represented in Parliament as a form which might be "relaxed where a good reason for such relaxation existed." In the University of Edinburgh, indeed, it was usually ignored, but in Glasgow, St. Andrews, and Aberdeen, it was rigorously exacted. On one occasion, however, the reality of its powers was fully proved by the exclusion, in 1847, of a candidate for the Edinburgh Hebrew Chair.[1] The Glasgow Chair of Chemistry being a Crown appointment, Dr. Wilson addresses his remarks to the Secretary for the Home Department.[2] A few biographical data are incidentally furnished, while the writer modestly sets forth his claims; the object he had in view, however, was not a selfish one, but rather the ungracious task of standing forth on behalf of all who, like himself, were not members of the Scotch Established

[1] Mr. Macdouall, now Professor in Queen's College, Belfast.

[2] "The Grievance of the University Tests, as applied to Professors of Physical Science in the Colleges of Scotland: a Letter addressed to the Right Honourable Spencer H. Walpole, Secretary of State for the Home Department." Edinburgh: Sutherland and Knox. 1852.

Church. If the test cannot be wholly abolished, he pleads, at least, for mitigation of its rigour. Happily a few more years brought about its abolition; and whether his pamphlet aided this result or not, it, at all events, served to call forth expression of the estimation in which he was held by the general public, and to show the striking union in him of unflinching boldness in a right cause, with the modest simplicity and gentleness which more usually characterised him. He was by this time recognised as "one of two brothers who rank among the most distinguished *savans* of Edinburgh. One of the two is the author of the most learned and judicious antiquarian work which has of late years been produced in Scotland. The other is a well-known chemist, and the contributor, if we mistake not, of most of those articles on scientific subjects in the 'British Quarterly Review,' which we have read with so much delight." In an article on the "Scottish University Tests and the Glasgow Professorship of Chemistry," the "Spectator" says, "Dr. George Wilson comes forward as one of the most eminent British chemists, one who, though a young man, has already achieved high scientific and literary reputation, and has been for years engaged in teaching his special science, to inform the Secretary for the Home Department, in whose gift the appointment to the Glasgow chair practically rests, that because of these tests he cannot offer himself as a candidate. Here is both hardship positive and hardship comparative; a hardship to be excluded, a double hardship to be excluded when others to whom the same objection applies, find themselves not thereby debarred." [1] The allusion here may be to devices for overcoming the difficulty in the way, mentioned in the pam-

[1] "Spectator," September 11, 1852.

phlet; how a professor-elect declared that he regarded the tests merely as "Articles of Peace;" another, having signed the bond, went to a bookseller's to discover what it was he had signed; and a third affirmed that the documents he had subscribed contained "the confession of his faith, and *a great deal more.*"

CHAPTER IX.

LIFE IN VARIOUS ASPECTS.

"'Twas a sight
Of wonder to behold the body and soul.
The self-same lineaments, the same
Marks of identity, were there:
Yet, oh, how different! one aspires to heaven,
Pants for its sempiternal heritage,
And, ever changing, ever rising still,
Wantons in endless being.
The other, for a time the unwilling sport
Of circumstance and passion, struggles on;
Fleets through its sad duration rapidly."

QUEEN MAB.

HAVING taken a general view of the results of the years of labour noticed in the preceding chapter, it will be well to retrace our steps, and to note what is otherwise of most interest in the same period. This may be considered the summer of George Wilson's life: in it the harvest was ripening which, not long after, showed itself ready for the sickle and the ingathering.

The ardent love with which his students regarded him found expression at the close of the Session 1845-46, in the presentation of a very handsome analytical balance, weighing to the 1oooth part of a grain. It was given at a public dinner, at which Professor Goodsir, Dr. Seller,

Professor Dick, and other friends, united with the students in manifesting kindly regard and respect.

The influence George Wilson exercised over those under his care was very great; indeed, the love with which he inspired those much with him, more resembled that of affectionate relationship than the usual intercourse of teacher and pupil. Deceit, dishonourable conduct, or idleness, met with little mercy; but with faults of ignorance, youthful impetuosity, or thoughtlessness, he had wonderful patience, accompanied by a power of eliciting the better points of character, which seemed at times to transform a youth of whom all were in doubt, into one abounding in rich promise. A pupil says of him, after an interval of ten years, during which there was little intercourse, and that chiefly by letter:—"I cannot say more than that Dr. Wilson's life and character have always been an example to me, as a realization, in some degree, of the highest life. My acquaintance with him would in ordinary cases have been but slight, as I was thrown so little into his society, and that at an age when I was hardly capable of valuing him. But there was something in him which I cannot define, which made me feel more than ordinary friendship, real affection for him, boy as I was; and I think this feeling towards him is what all had who worked under him while I was with him. That something consisted partly in an earnestness and practical goodness which inspired one with respect and admiration, partly his great consideration for others, which gave his inferiors confidence—I mean inferiors in intellect, experience, or anything else—and a warmth of feeling which drew one to him immediately, and which, so far as I knew him, never cooled. All this falls very far short of my aim. I can only say that I count it a blessing to have known such a man, such an example."

His assistants in the laboratory and lecture-room were objects of much interest to him, and in almost every case his regard was warmly reciprocated. One of them says :—"He always treated us as if we were his dearest friends;" showing that the delicate courtesy of his manners was appreciated. Another writes,—"I shall never require anything to remind me of one who was so true a friend of mine at all times, and whose memory I respect beyond that of any other man I ever knew." This attractiveness was one of the most remarkable features of his character; while it made him almost idolized by the circle of friends to whom he was best known, it extended to his public audiences, and even to the chance acquaintances of a day or hour. "The wonderful power he had in his genial happy nature of making others love him, is strange and almost overpowering in its manifestations." One who knew him from his writings says,—"So much of the man himself came out in all that he said or wrote, that even in those who knew him only from his public actings, there insensibly grew up the feeling of personal attachment to the great heart that welled over in his writings and addresses." To multiply testimonies of affection of a striking nature would be easy, but they could no more convey an impression of the truth than would a description of the fragrance of a bouquet of flowers, bring back the exquisite aroma which was so gladdening and refreshening. Friends who knew him will think this attempt to speak of his loveableness a failure, while to others it may seem overstrained and unnatural. We shall only, therefore, in addition say, that no one was more surprised at it than himself. What could make So and-So take such a fancy for him, showing it by untiring labour on his behalf, was often a subject of speculation, the riddle being sometimes solved by his saying that there

surely must be something of the hypocrite in him, or people would not esteem him so much better than he deserved. "I cannot but painfully contrast," he writes to a friend, "my own poor deservings with your estimate of my worth; a little praise is all that is good for me, and I get frightened when I have much of it. I shall try to deserve your good opinion, and that of your kind friends." This grace of humility, doubtless, cast a charm over all his acts, and in it somewhat of the secret of influence may be found.

Evidence has already been afforded of the new principle by which George Wilson's life became actuated after his illness of 1843. It would be impossible, however, to give to those who never came in contact with him any adequate impression of the extent to which his whole life was influenced by his religion. After the date above mentioned, it may be said that an unseen world was never altogether absent from his thoughts. It was obvious to those who lived with him, that it was a life-long aim to cast away whatever hindered the progress of true spiritual life; and few can guess how religion purified and ennobled what was already in him of goodness and beauty. In all suffering, and work, and intercourse with others, it was clear that the Christianity by which he was influenced was something which strengthened him for his actual life; and thus was he ever steadily increasing in sympathy with, and striving towards, that which can be fully realized only in another world.

One thing is to be noted of him as exceedingly characteristic. It was only at rare intervals that he ever spoke to others of that which thus exerted so mighty an influence upon himself. Nothing was more distasteful to him than

the obtrusive profession of religion common in our day, as if it were a desirable thing ever to be laying open the inner life. By no act or word did he ever say, "I am holier than thou;" a clear perception of the high standard set before him leading rather to his esteeming himself, like St. Paul, "less than the least of all saints."

We may here give some extracts from letters of the time now under review, by way of illustrating in some measure the progress of his inner life. It is never, however, altogether a desirable thing to detach religious acts or expressions from contemporaneous secularities and environments; and this is strongly felt with regard to the portions of his letters which are given below. Never could there be a more charming union of playfulness and fun, with high-toned spirituality, than in very many of his letters. They remind one of an air with many variations, some in a minor key, which never fails, in all its sweet wanderings and eccentricities, to return to the key-note, leaving the listener with a sense of refreshment and invigoration. In this way, by giving merely parts of his letters, these extracts themselves, beautiful as some of them are, lose more than half their charm. This, however, is unavoidable.

In May 1845, he writes to his much-loved friend, John Cairns:—"When I contrast your profession with mine, with which in much of the machinery made use of in other points it has many affinities, I could envy you your glorious calling. . . . . I had been thinking, as I should have no evening work in the way of lectures, and far less every way to do, of teaching a Sabbath class, but Mary remonstrates so strongly on the score of health, and I feel the argument so reasonable, that I am shaken in my intention, though it is not abandoned. I must find some way of serving Christ better and fuller than I have

employed hitherto, or I shall truly be an unprofitable servant."

"*December*, 1847.

"I have found out a means of doing good, that I hope God will bless. I discovered recently that sick people, who will not stand a word of religious advice from their neighbours in health, are more ready to listen to another sick man like me. You will think I have been very late in making so notable a discovery. Never mind that; one of my pupils of a former year, a remarkably acute, hard-headed, and self-reliant lad, has recently passed into one of the latest stages of a hopeless disease. Knowing that his family, though in intellectualities much above the average, in so far as religious knowledge is concerned, were little likely to make known to the lad how soon he must go to meet God, I cast about for means of getting at my old pupil. His father was in town, and promised to call on me, but was prevented. I intended, had he done so, to have asked his permission to write to his son, but it was a formidable business to do so by a formal letter. Behold, however, the mercy of God, and his answer to the prayer of a servant who had been asking Him for work! Whilst I was resolving and hesitating to write, a letter came from the lad himself, asking me to write to him occasionally, as it would be a kindness. I replied at once, and found him glad to have the ice broken in respect to his spiritual state. An exacerbation of his illness has turned all his thoughts towards another world, and now he sadly beseeches me to write as often as I can."

In the same year he apologizes for the non-appearance of a hymn: "It, and all other rhymical work, have been stopped by a painful but pleasing occupation, which has taken up the quiet hours of the Sabbath. A young lady of

fourteen, dying of consumption, has asked me to write to her, and I have been trying to tell her how the grave may be robbed of victory, and death of his sting. She is in the country, and has got to expect a letter every week. I don't like to disappoint her, for she is a singularly amiable, gentle person, to whom heaven, I believe, has already held out a welcome; and so I have been stopped in the hymns."

The young lady died about a month later than the date of this letter. A series addressed to her are full of the tenderest counsels and consolations.[1] They gave great pleasure and comfort to her in the prospect of quitting this world, and to many besides have they been the means of spiritual good. A valentine sent to this invalid testifies to the kindly thoughts he cherished of her temporal as well as her eternal happiness. The acceptability of his religious letters, written in his most winning style, became so well known, that abundant scope was afforded for work in this direction. Of these several series remain, affording evidence of his deep earnestness and affectionate solicitude. The simplicity of the plan of salvation, the glorious character of the Saviour, and the privileges of prayer, constitute the prevailing themes. Even to irreligious people his letters of this kind were welcome, while similar appeals from others roused their indignation.

In 1848 we find him saying, "I long for work in the service of Christ. I have found the means of doing a little good by writing to invalids; but I may do that and much more. The Medical Missionary Society are to have some lectures to students of medicine this winter. I am to give one, I believe; that is so much." "The

[1] Both the series of Letters alluded to, have been published under the title, "Counsels of an Invalid." Macmillan and Co. London.

students say that they don't care about addresses from ministers, but they'll listen to a lecturer on chemistry, and I hope I shall succeed in speaking a seasonable word to them."

The title of his lecture, one of a series delivered at the instance of the Edinburgh Medical Missionary Society, was "The Sacredness of Medicine as a Profession," and it has been published with the others.[1] A perusal alone can enable us to follow him, while he points out the moral, benevolent, and Christian character of medicine; but a few of its closing sentences may show its spirit: "I adjure you to remember that the head of our profession is Christ. He left all men an example that they should follow His steps; but He left it specially to us. It is well that the statues of Hippocrates and Esculapius should stand outside of our College of Physicians, but the living image of our Saviour should be enshrined in our hearts . . . . He is not ashamed to call us brethren. May none of us be ashamed to call him Lord! May we all confess Him before men, that He may confess us before the angels in heaven!"

To one who had just lost a brother, he says, in 1845,—"To myself to die and be with Christ, seems so much better than any possible way of serving God here, that I cannot prevent myself thinking of your brother, as Peden did of Richard Cameron, when he came to his grave to say, 'Oh! to be wi' Richie!'" To a fellow chemist,[2] in 1848,—"There are none, I am sure, who ought to be more religious than men of science, professing as they do to love God's works, and to know them better than others do. There are none, too, who need religion more, for the isolation of their pursuits narrows their hearts, and

[1] "Lectures on Medical Missions." [2] Professor Voelcker.

the struggle for places and distinctions, in which all are involved who, like you and me, must live *by* science as well as *for* it, leads to rivalries, heart-burnings, and disappointments, and sows, with the devil's help, the seeds of envy, hatred, malice, and all uncharitableness. Nothing but the restraining grace of God, and the presence of His Spirit, and the all-prevailing mediation of the Saviour, can keep us from falling. Nothing but the full realization of the manifest and yet ever-forgotten truth, that God is much greater than all His works, and a far nobler object of love, can elevate our affections."

To Mr. Alexander Macmillan, Cambridge, in 1850,— "In what you say of Christ and His example, I cordially join. It is a blessed thing, as a friend said to me, to have a creed; not that any man will be bettered by adopting one, unless it is his soul's belief. I mourn, however, over many whom I know, who are always learning and never coming to a knowledge of the truth; who are bewailing the bigotry, narrowness, and effeteness of modern churches, and seeking for some new catholicon to heal all. Far be it from me to defend our religious bodies from many of the charges made against them. Men are both worse and better than their creeds, which are but imperfect standards by which to try them. Religion should be a life, not a doctrine; and if we cannot find what it should be as the former, from the life of our blessed Lord and Saviour, I know not where we shall find it. Often do I think of those startling words, 'When the Son of Man cometh, will he find faith on the earth?' If men, instead of fretting themselves because their neighbours are foolish religionists, would leave them and their real or supposed follies alone, and go to Him who is all wisdom, and all holiness, and all love, they would find differences of creed adjust themselves in the

light of that love of God, and that love of our neighbour as ourselves, which are the fulfilling of the law. I rejoice that I have a creed with which I can face death and eternity, and which makes this life often a joyous worship, and always a patient endurance. My prayer is for a closer union to Christ my Saviour; to be able to say as St. Thomas did, with my whole heart, 'My Lord and my God;' to realize to the fullest His personality and His humanity; and to walk in His steps as a lowly follower, and disciple, and servant. For all my friends, as for myself, I ever ask this blessing. It includes everything, and will open in good time all the locked secrets of Providence, and furnish not *a*—but *the* theory of the universe. I am glad you liked 'Athanasius;' I shall perhaps send you another little thing one of these days; but till I am clear of my present book-writing, I cannot let my thoughts go forth in the way they must do to beget poetry."

The verses alluded to will not be unacceptable to many:—

ATHANASIUS CONTRA MUNDUM.

O, Athanasius! thy too subtle creed
Makes my heart tremble when I hear it read,
And my flesh quivers when the priest proclaims
God's doom on every unbeliever's head.

Yet I do honour thee for those brave words
Against the heretic so boldly hurled,
"Though no one else believe, I'll hold my faith,
I, Athanasius, against the world."

It was not well to judge thy fellow men,
Thou wert a sinful mortal like us all;
Vengeance is God's; none but himself doth know
On whom the terrors of his wrath will fall.

But it *was* well, believing as thou didst,
Like standard-bearer with thy flag unfurled,
To blazon on thy banner those brave words,
"I, Athanasius, against the world."

Thy faith is mine; but that is not my theme:
'Tis thine example I would preach to all;
Whatever each believes, and counts for true
Of things in heaven or earth, or great or small,—

If he believe it, let him stand and say,
Although in scorn a thousand lips are curled;
"Though no one else believe, I'll hold my faith,
Like Athanasius, against the world."

To Dr. Cairns, George writes in May, 1851,—"I am sure you cannot have more pleasing, and certainly not more profitable remembrances of your visit than we have of your sojourn. I am always quickened spiritually by intercourse with you; always grateful for a word in season. I wish I could see in myself greater growth in grace. It is very slow. I seem to see some loss of downward tendencies, yet I am like a balloon which, in spite of casting out its ballast, does not rise. I cling now little to this earth, and sometimes ask myself, suppose all your bright youthful visions were fulfilled, would you be happy? and I answer emphatically, No! I have had more pleasure in teaching for a friend a Bible class for three Sabbaths, than I have had in anything for a long season. I had longed and prayed for a more direct way of serving God, and being comparatively well this summer, had secretly resolved to ask this friend to let me address his class one evening, when, lo! he came and besought me as a favour to take charge of it in his absence from home. Surely there is a God that answereth prayer." It was the custom of those friends to exchange letters at the close of each year, reviewing the past, and glancing to the future. In that of Decem-

ber 28, 1851, George says,—"There are white hairs in both our beards, and we are growing graver, as we would do if we were mere animals. Yet I hope I sit looser to the world, and nearer to Christ; but not near enough. This evil heart of unbelief will not quickly soften, and the Saviour is not freely given the central place in it; the world looms deceitfully large in all my visions. To do work for Him, in His Spirit, is my increasing desire. May my prayers be heard, and yours be doubled for me. I know a serenity I have not known for months. How much of it is the fruit of better health and less work, how much through God's grace, I will not curiously inquire. They are all His, and only His gifts. The whole household sends you the sincerest wishes for a happy New Year. I seem to feel the pressure of your great kind hand."

After months of over-work and fatigue, he tells the same friend in 1853,—"I can with a rejoicing heart say that that great and gracious Lord and Master whom we serve, grows day by day dearer to me, and to do His will is to me increasingly the desire of my heart, and its prayer."

Writing to Dr. J. H. Gladstone in 1854, of a medical student preparing for the mission field, he says, "He is in the way of a training which will make him a powerful ambassador for Christ among the subtle, sagacious, metaphysical, oriental nations. I am going to give him charge of a class in summer, to secure for him a thorough familiarity with our noble science. It is a blessed thing to know that our Art, once called emphatically 'the Black Art,' and which, when not held to be the offspring of Satanic collusion, was looked to by the vulgar as fitted only to gratify their lust for gold, can be made by us to serve the cause of Christ. We shall be alchemists of another sort than the older ones, and whisper to an unbelieving world that there

sitteth beside the refining furnace a great Master who can transmute the vilest human dross into gold seven times purified, and died that he might procure for us the elixir of life, and secure for his people a blessed immortality."

Without passing beyond the ten years to which we have limited our consideration latterly, we shall only add, as a closing stanza to this portion, one more quotation from a letter to Mr. A. Macmillan, in June 1854:—"This is a peaceful Sabbath evening, and my heart is full of gratefulness to God for many and great mercies to me. Amongst these are my friends, and my gratefulness shapes itself into a prayer to God that He will give them His choicest blessings, make them like His own dear Son, Christ the Lord, and fill them with His Spirit. And may we all have some work given us to do for Him, and find such pleasure as the angels feel in doing His work and obeying His will!"

The desire to conduct a Bible class was more fully met by a request from some young men, in 1852, to meet with them on Sabbath evenings. It was gladly responded to, and some of them remember with vivid interest those hours, and the elucidations given of the book of Hebrews and that of Ecclesiastes. Very full notes remain as evidence of the great care and diligence with which preparation for these meetings was made. His broken health and constant overwork made it impossible for him to continue this work long, dear as it was to him. His services on behalf of the Medical Missionary and other benevolent Societies, can only be glanced at. It may safely be said that, according to his ability, yea, often far above it, as regards physical strength, he was at all times found to be "ready to every good work."

The constant strain made upon his energies by the work of winter and summer, made the short periods of relaxation

in each spring and autumn most welcome to George. In spring especially, the effects of previous work became painfully manifest, showing themselves frequently in great mental depression and sadness. Frequently he was so overpowered that he would scarcely speak at all, after returning home, during the whole evening; and he shrank from even his dearest friends. At such times he would say to a sister, "Let us go to some quiet place, where we shall meet no one we know." For this there was no remedy but change and rest; and these were thoroughly enjoyed, and generally produced the desired results. Many of such holiday seasons were spent in favourite retreats, among which may be named Morningside (a suburb of Edinburgh), Dirleton, Melrose, Innerleithen, and Bridge of Allan. It was not from lack of desire that his holidays were not spent among more interesting and exciting scenes. To see new places, things, and people, was ever a delight to him. Continental trips were frequently planned, but when the time approached for their fulfilment his strength was found unequal to the demands they were likely to make on it; and medical advisers invariably counselled the avoidance of much travelling, especially by sea. Even the occasional business journeys, which were unavoidable, were not without danger, from the fact that disease had been present in his lungs from the time of their first affection in 1843. While absent at holiday times, it was his custom to write frequently to his mother to beguile her solitude. Those letters usually went by the name of "George's nonsense." A few specimens will be given occasionally. Here, for example, are one or two from Bridge of Allan :—

"*April 5th.*

"This is a most lazy place; nobody does anything but eat and sleep and lounge, and we follow the universal example.

The weather is delightful; my cough reduced to a mild trumpeting; my bed no longer, like Job's, mocking me when I go to it, saying, 'Thou wilt comfort me,' but folding me in its arms, and hushing me asleep; my conscience is seared or congealed, and goads me in vain to work. I reply bluntly, 'I won't work,' and win the battle. . . . All here looks balm and sunshine. I saw, to be sure, two poor fellows with legs quite naked, sitting exposed to wind and rain, and was about to say to myself, 'There is misery everywhere,' when on closer inspection I perceived that—but I don't know that they were any the warmer for that; however it relieved my mind when I discovered—though perhaps it will not yours—that they were Highland soldiers. . . . A pair of chaffinches who have just entered on married life, *stay* opposite us in a fine airy larch-tree villa, and chat away about the babies they are looking for in a very pleasant fashion. The oldest son is to be a poet, and the oldest daughter a musician, but they had not when our reporter left, considered a calling for the third child. You will give them your benediction."

"*April 18th.*

"They speak of the luxury of doing good, but what is that to the luxury of doing nothing; especially when, as in the present case, doing nothing is doing good! What did I do yesterday? Nothing! The day before? Nothing! What am I doing at present? Nothing! Accordingly, a diary of my proceedings would not be very interesting, and need not be extended."

"*April 28th.*

"We have been giving all (no! not all, but many of) our friends drives, the money which they paid being handed over to Greybeard [a horse], who is gathering up to buy

himself a gold eye-glass. Even without that elegant and useful appendage he is much admired.

"A flock of lambs in the field opposite to us have got up a racing club among them, the first meeting of which, I am sorry to say, was held on Sunday evening. Five of them, called respectively, Lamb, Lambkin, Lambling, Lamblet, and Lammie, started for the first race, and to the delight of their admiring mothers, each was first. The conquerors were rewarded with a mouthful of cream, and then, with many tail-waggings, were sent back to their racing. To-day the sun is sleepy, and late of showing himself, and the lambs are very quiet.

"I have some fine light reading in the shape of a ponderous MS. folio of Evidence before the House of Lords. It was sent after me, to be studied in reference to an action for compensation. I read a little of it now and then, but I am saving my brains, and leading altogether such a life as an owl in easy circumstances may be supposed to do."

"*May 5th.*

"Three weeks of idleness are now nearly ended; weeks of as sheer idleness as I ever spent; and I do not feel a bit conscience-stricken for all that. . . . Yesterday we had a delightful drive. The day was the brightest and warmest we have had. We went by out-of-the-way, picturesque roads, new ones, not afflicted with toll-bars. A novel and most splendid view of the Valley of the Forth repaid Greybeard for a climb at one point. Such a panorama! I will not spoil it by trying to describe it. I felt strongly in looking at it, that it was a landscape like the one I gazed at, with prominent marked-out hills, great mountains girdling the horizon, sunny slopes glidling down to the water-side, and a silvery stream reflecting the sky in its bosom [take a

breath whilst I get a dip of ink]; it was this that made men patriots. I could not fight stoutly for the marshes I saw about Cambridge, but I would fight 'a bit' for a countryside like this. But what have I to do with fighting? Nothink! Therefore let me go on to say that we visited a colony of those lively pretty birds, the jackdaws; and that I saw a bird I never saw before, namely, a jay, a beautiful creature, prettily parti-coloured, and active on the wing. We got but a glimpse of him, for he was not sure of us."

In the spring of 1847, a poem, addressed by him "To the Stethoscope," attracted much notice. It appeared in "Blackwood's Magazine," and the Edinburgh doctors, who eagerly sought to discover the author, were not a little surprised to find him one of themselves. In the few words of preface to the lines, he says, "The stethoscope has long ceased to excite merely professional interest. There are few families to whom it has not proved an object of horror and the saddest remembrance, as connected with the loss of dear relatives, though it is but a revealer, not a producer of physical suffering."

Having occasion to send to Lord Jeffrey, with whom a warm friendship was springing up, a volume for perusal, a copy of the "Stethoscope" accompanied it, which was acknowledged by him thus: "I have not yet had time to read much—*except the poem*—with which I was much gratified, and (if you will allow me to say so) also a little *surprised.* From the nature of your pursuits, I certainly was not prepared to find *this* among your gifts. But it is one of which you have reason to be proud,—the specimen you have sent me being full of beauty and deep feeling, as well as having a great command both of versification and poetical

diction. It is, perhaps, rather too much expanded; but your two pictures (especially the first, of the consumptive girl) are very touchingly and gracefully executed, though I can scarcely forgive you for giving us only the tragic and fatal vaticinations of your stethoscope, and not cheering us before concluding with some of its happy deliverances and revivals. Indeed, I think I should be justified in imposing such a supplement as a task for your last days at Dirleton."

To the suggestion made in the close of the letter, George could only reply, that as the joyful side of the picture had not fallen to his lot, he could not portray it. The other, alas! was but the welling forth of thoughts which, by expression, relieved the scorched heart, on which they had been imprinted as with letters of fire. "I have not been describing imaginary scenes," he says; "I have written some of the lines with tears in my eyes."

The beauty of many of his poems has been freely acknowledged, but exception made to their frequent irregularities of metre. A quotation from a letter to Dr. Cairns, who had alluded to this blemish, gives his own idea of the matter. "When you come to Edinburgh, be sure to bring that Latin hymn book with you. I won't give you a translation of any one of those grand hymns, because I can't. It is above and beyond me. I could not, apart from everything else, reproduce their exquisite rhythm and metres, without which they would become alien paraphrases. I—to descend from heaven to earth—do not use irregular metres, because I despise regular ones; neither do I think the former preferable. I use them because I cannot compass the latter. At school, though a dux, I was a poor hand at scanning, and most unprolific in Latin verse. In the days of my folly, some young ladies tried to teach me to dance, but signally failed, for I could not keep the step, and was foiled both in

waltz and quadrille. Part-singing is equally a closed region to me, for I never could keep time.

"Understand, then, that I do my best, not wilfully following divisive courses, but using the eccentric gift that is in me as well as I can. Do not say this hymn will not scan; but this hopelessly unscannable hymn will, or will not do. I am not an engine running on hexameter, pentameter, long metre, short metre, 'old' or 'new hundred' rails. I am an unlicensed privateer, now sailing discreetly before the wind, and then tacking at a sharp angle; now covered with canvas, and then with the sweeps out, oaring off the lee shore. The end of the manœuvring, however, is not the manœuvring, but only like the steadiest lugger or straightest sailing steamship, to reach my port; and I need lots of steerage way. Now, the application of all this tirade is, that I have several hymns on hand, which I think will soon get finished. Also, since out here [a country residence] I have made large additions, spite of rheumatics and the east wind, to a long poem, treating, with shocking irregularity of metre, of this life, and of the life to come, on which, when completed, and that soon too, I trust you shall sit in judgment."

This reference, in 1848, is to "The Sleep of the Hyacinth," which never was finished, and which has been given to the public in its fragmentary state.[1] The hymn enclosed in this letter was probably the following, which appeared in "Blackwood's Magazine" soon after. During the previous winter he had only been once at church owing to the state of his health. "On one of the stay-at-home Sabbaths I wrote the enclosed hymn, which is at least not the expression of a sham feeling, but an honest and earnest utterance of what I daresay many an invalid has felt; only don't suppose from the second line that I am a weeping phi-

[1] See "Macmillan's Magazine" for April and June, 1860.

losopher. That's a fetch. I have roared in the hands of the surgeons, but I never cried."

THE WINGS OF THE DOVE AND THE EAGLE.

PSALM lv. 6; ISAIAH xl. 31.

As I lay upon my bed,
  Weeping and complaining,
Turning oft my weary head,
  Hope and help disdaining;
Lo! before mine eyes there stood,
  Vision of an ancient wood,
Full of happy birds pursuing
  Each the other with keenest zest;
And I heard the plaintive cooing
  Issuing from the turtle's nest,
Till I murmured at the sight,
  And forgot God's high behest;
"Had I but your wings, I might
  Fly away and be at rest."

Then the low, sweet, plaintive cooing
  Of the fond maternal birds,
Seemed itself with thoughts imbuing,
  And at length flowed forth in words.

"Plumes of doves and fluttering wings
Are but vain and feeble things,
  Timidly the air they fan;
Scarcely would they serve to raise thee,
Need the truth at all amaze thee?
  O'er this earth a little span.
Look thou there!" and, lo! an eagle,
  From his nest amid the stars,
Stood before me with his regal
  Front, and venerable scars.
In a moment, wide extending
  His great wings (so seem'd my dream),
He was in the air ascending
  With a wild, exulting scream.

Fiercest winds, and rude blasts blowing,
Could not stop his bold careering,
Higher still and higher going
He kept ever upwards steering,
Till I lost him in the zenith,
Far above the mid-day sun,
Where he seemed like one that winneth
Rest in heaven when work is done.

"Judge thou, then," the voice said, "whether
This or that's the better thing—
Rainbow-tinted dove's soft feather,
Or the eagle's ruffled wing?"
"That's the better!"—"Rest then still!
In thy heart of hearts abase thee;
Lose thy will in God's great will.
By and by He will upraise thee,
In His own good time and season,
When 'tis meet that thou shouldst go,
And will show thee fullest reason
Why he kept thee here below.
Wings of doves shall not be given;
But to lift thee up to heaven
Thou shalt have entire dominion
O'er the eagle's soaring pinion,
Thou shalt mount to God's own eyrie
And become a crowned saint,
Thou shalt run and not be weary,
Walk, and never faint;
Therefore utter no complaint."

Now I lie upon my bed,
Saying, "Be it even so,
I will wait in faith and hope
Till the eagle's wings shall grow.

The subjects of his verses are very varied, some being sacred, and expressive of his deeper feelings; others brimming over with fun, as in the youthful days, in the form of Valentines, prefaces to books for autographs, and rhyming

letters. Of the lighter effusions we may name, "A Naughty Graph;" "Valentine to S. D.'s donkey, Flora;" and a series of Valentines from Redivivo, his terrier, to Lady Fanny, a pet squirrel, in which both these animals show a power of versification highly creditable to them.

A specimen of the more humorous will not be unwelcome :—

ONE OF THE ADVANTAGES OF NOT BEING ABLE TO WRITE YOUR NAME.

I've heard a story of a country wight,
Whether 'tis true or not I cannot tell,—
Who never had been taught to write,
And very likely could not spell.
He kept a sort of shop of shops
Dealing in blacking, boots, and teas,
In Epsom salts, and humming tops,
And cotton handkerchiefs, and Stilton cheese.
His windows were so full they cut a dash,
And he displayed his goods, and people wanted them;
And if they could not pay in cash,
And asked for credit, why, 'twas granted them.
But how was't possible to keep his books
When he was ignorant as any nigger,
And never learned to make pot hooks,
Or found in early life the way to figure?
Why, this he did: he used his pen,
But not to mark the money due him;
When he sold any goods, why, then
He pulled his ledger out and drew 'em.
If hats were bought, he painted hats,
If China ware, he sketched the dishes;
If mats were sold, he drew the mats;—
Or herrings, portraits of the fishes;
And so, with some mysterious signs
That made his pictures clearer,
He marked beside his quaint outlines
Whether his goods were cheap or dearer.

One day a customer came in to settle
And begged his bill might be looked up,—
There drawn against him stood a kettle,
A pound of sugar, and a breakfast cup.
"And I find also," quoth the dealer,
"Here sketched against you, if you please,
Nothing you see, Sir, could be clearer,
The portrait of a skim-milk cheese."
"A cheese! oh no!" the other cried,
"I never bought a cheese from you."
"You did indeed," the first replied,
"And there's the figure of the cheese I drew."
And so he showed a round thing like the moon,
Or any other round thing that you please,
A hoop, a ring, a saucer, or a spoon,—
But he who drew it said it was a cheese.
A cheese it could not be, the man protested;
And so there rose a very strong contention—
Cheese or no cheese, they bitterly contested,
And lost their temper in the hot discussion.
At length the dealer, making no impression,
Suddenly stopped and changed his ground.
"My good man," says he, "make at least confession,
You lately purchased something round."
"Round!" quoth the customer, "why, wait a bit!
Ay, sure enough, as I'm Jack Bilston,
(We'll square it now, the nail you've hit),
I bought from you last spring a millstone."
Loud laughed the dealer; "I forgot—
I see you did not try to diddle—
To put within the ring a dot,
To show the axle in the middle:
I mark my cheeses from my millstones so,
But I was hurried on that day,
And so forgot the dot; but you must go,
Well, here's the sum you have to pay."
The two shook hands and parted friends,
And wondered they had been so hot.
A story's good if well it ends,
And here you see's the wondrous dot—.

MORAL.

This worthy man no doubt had his distresses,
But well he could afford to laugh;
He might mistake his millstones for his cheeses,
But none could ask him for his autograph.

As the friendship with Lord Jeffrey has been alluded to, one or two extracts from his letters may be given to show the extent of his regard. Feeling assured that had Lord Jeffrey now been in life, a similar testimony would have been given, we feel at liberty to make use of them. In a note acknowledging a paper, possibly his article on "Chemistry and Natural Theology," in the "British Quarterly Review," Lord Jeffrey says,—"I thank you very heartily for your touching and earnest homily. I do not perhaps go entirely along with you in some of your conclusions, but I never read anything you write, without feeling myself the better for it, and being made more aware of the leavening and pervading effect of an earnest and fearless charity." The following letter is given entire, with an omission only of some extraneous remarks, of temporary interest. It apparently contains a reference to the article mentioned in the preceding extract:—

"24, Moray Place, *Wednesday*, 15*th March*, 1848.

"MY DEAR DR. WILSON,—I was very sorry to miss you when you took the trouble to call the other day, and if I had not been very seriously unwell ever since, I should have made another attempt to see you before starting for England, as (if at all able for the journey) we now propose doing in the course of to-morrow,—not that I have anything in the way of business, or of any moment otherwise to talk to you about, but merely to shake hands with you,—

to thank you for the very striking, *courageous*, and useful paper you were good enough to send me; and to assure you (though I feel I can do *that* better in this way than to your face) that I have a very sincere admiration for your gifts and attainments; and, if you will allow me to say it, a very true affection for the many loveable traits I have discovered in your nature. The gentle and magnanimous cheerfulness with which you bear continual sufferings, and the contentment with which you have accepted a position which every one must feel to be inadequate to your merits, have made a deep impression on me from the first time I had the honour of your acquaintance; and I really cannot resist this opportunity of saying, both that I shall be proud to learn that you think the offer of my friendship worthy of your acceptance, and beg you to believe that there are few things which would gratify me so much as to be enabled at any time to render you any service.

"I am not without fear that you will think all this very intrusive and impertinent—and yet I hope not. At all events, I really could not help it, and I am sure have been as far as possible from any purpose of vexing or offending you. . . . . I hope this vernal-looking weather will tempt you soon to your pleasant retreat, and that we shall all meet at Craigcrook in improved health before the end of May! Meantime, believe me always, really and truly, very affectionately yours, F. JEFFREY."

This warmth of regard continued unabated, and it may be supposed, met with a ready response. In January, 1850, George writes to Dr. Cairns,—"You will have heard of Lord Jeffrey's death? a great blow to me, for I had got to love him, and feel a very strong affection for him.

I called the very day of his death, and found him, to my utter horror, believed to be rapidly sinking."

In the spring of 1847, there came again one of those great waves of sorrow which, from time to time, well-nigh overwhelmed George.

The heart-affection from which his sister Mary had suffered for many years, had compelled cessation of active exertion, and in her comparative exclusion from the outer world, it had been her great delight to act, so far as strength permitted, as George's amanuensis, entering into all his literary pursuits with keen interest. The two were so inseparable, that friends often compared them to Charles Lamb and his sister Mary, between whom a similar union existed. Her gentle, patient endurance of sufferings, made their gradual increase, for some months previous to her death, less marked in the family, and only one night of great distress intervened between the ordinary routine and the blank occasioned by such a loss. The following letter to Dr. Cairns conveys the first expression of George's desolation :—

"*April* 21, 1847.

"DEAREST FRIEND,—I have the mournful news to communicate to you, that Mary is gone to the world of spirits. How deeply I loved her I need not tell you, nor how deeply she deserved the inadequate affection I felt for her. I count upon your full appreciation of the greatness of my loss, in the sundering of the earthly bond between Mary and me.

"She died this morning about eleven o'clock, so gently, that the spirit had fled before Jessie, who was watching her, observed its flight. . . . We apprehended no serious danger; . . . yesterday we thought her better than she

had been some days before, and I was out in the evening at the School of Arts, where I was detained from seven till after ten o'clock. . . . Though her agony was great, she expressed calmly and distinctly her faith in Christ . . . comforted herself with passages of her own remembering, and prayed audibly and earnestly, referring at intervals to what an awful thing it would have been had she then required to think for the first time of going to judgment.

"How the unkindnesses I have shown her come back on me now! To think that yesterday was the last day that I was to spend with her on this earth, and I did not know it. A round of necessary, but trifling duties, kept me from her; yet I loved Mary better than I loved anything else in this world. For the last six years we had been greatly together. We knew each other so well, and she was so fond, so kind, so self-denying, so generous, so noble in all respects, so devoted, that now that she has followed James, I feel alone. Nobody can ever be to me what she was. I cannot estimate my obligations to her. I have leant so long on her that, now that her support is gone, I feel as lame in spirit as I am in body. Pray for me, my dear friend, and her dear friend. Pray for me; I need your prayers. It seems but a black dream, and yet it is a reality to make dark a lifetime. I will not be long of joining her."

Three months later, in a "hasty laboratory note" to the same friend, he says, "I have enjoyed more, latterly, I think, of the sense of the Holy Spirit's help than I have ever known before. Mary's memory is full of blessed associations. The succeeding two months will, I trust, yield me still more leisure for sacred things."

"*December*, 1847.

"Pray for me much, my dearest friend. I see few, very few, devout people. From the public services of the

sanctuary I am cut off. I never hear a prayer. When I look into my heart I see so much sin there; I give way so often to unchristian passions and gratifications, that I tremble at the thought that God's grace, so little improved, will by and by be taken away. Counsel me; I have no Mary now, with her gentle, impressive words, and the utterings of lengthened Christian experience, to reprove my sins and follies, and keep me from evil. She was my mother in Christ, and you my father."

"*March* 31, 1850.

"Your letter was to me unspeakably dear, and again reminds me of what I never can or will forget, that you are bound to me by ties such as connect none other of my friends to me. The dark past, which was long to me the very blackness of darkness, has now stars above its horizon, and the shadow, not of the grave, but of the world to come, over it. I begin to think abidingly of Mary, not as one of the dead, but as one of the glorified living, though at no time do I realize it less than at this mournful season of the year, which has witnessed the death of so many of my dearest ones. The last lecture-night at the School of Arts remains as the ineffaceable remembrancer of the latest great sorrow, and inevitably links other griefs of a kindred sort with it: and the whole of April is to me a month of physical fatigue, depressed energy, and painful emotion, which I know better than to cherish, but have not learned the way to cure. . . . Of James I think with more mingled feelings than of Mary, but with unabated, nay, with ever-mellowing affection. . . .

"On all this I will say no more. It would distress others too much to speak thus to them, and might seem to betoken less affection for their devoted love than they deserve or I

feel. There are some affections which do not grow by excluding or uprooting others, but, like vines and elms, grow best together, and I should mourn the day when I found it impossible to cherish together love for the departed, and the living."

The loss of the terrier, Grim, was associated with his sister Mary's love for the dog; and in December 1849 he writes to a friend, Mr. J. C. Brown, "Have they told you that Grim is dead? Poor little fellow, he was suddenly attacked in the very midst of his gambols by a stroke of apoplexy, and died in a few hours, in spite of the promptest treatment. The sight of animal suffering is always to me very horrible, and the loss of my kind little companion has vexed me grievously. He was dear to me for his giver, my good cousin Alick's sake, and still more as a memento of my dear sister Mary, with whom I always in thought associated him; and I feel his loss very bitterly. Somehow, Christmas has always been a sad period with me, and this year is like preceding ones in that respect." Of a visitor who was present when Grim was seized by illness, he remarks: "Your brother David is a fine fellow; his sympathy with me over my little dog's dying agonies endeared him to me. I loved the poor fellow for Mary's sake, and lamented him sincerely." Grim was a general favourite with his master's friends, and was always recognised as a member of the family, being spoken of as "my son Grim." A letter to Miss Abernethy contains this paragraph: "Mi respectabel parint is tolerabil, and if the Guvirnor wood not li on the sofa, but run after the geeg as i doo, which would be quite well, butt the oald geinleman luvs too grumbel.—And am your afekshinate stepsun,

"GRIM WILSON."

It is recorded of him by his master that "he never said an ill word in his life, except once when he cried 'Bow, bow,' after a man with bowed legs."

A note-book contains the following lines to his memory :—

TO THE SPIRIT OF A DECEASED TERRIER.

My little dog ! I loved thee well,
Better than I to all would tell ;
When thou wert dead, a shadow o'er my spirit fell.

The music of thy pattering feet
That came so gladly me to meet,
Will never more my senses greet.

All are at rest ; thy wagging tail,
Thy little limbs that did not fail
For many a mile o'er hill and dale.

Where art thou now ? myself I ask,—
In vain Philosophy I task ;
She cannot here her blindness mask.

Art thou within that Sirian star,
That shines so bright, and seems so far
From this dim world in which we are ?

Where'er in the Universe thou art,
If still of it thou form'st a part,
Thou hast a place within my heart.

What are thy thoughts, thy hopes, thy ways ?
What are thy duties ? what thy plays ?
How spendest thou the livelong days ?

Thou didst not love on earth the Sunday,
It was so grave : it was no fun-day ;
Thou couldst have wished each day a Monday.

Dost thou with soul of shadowy cat
Fight ? or with spectral spirit-rat ;
Or slumber on celestial mat ?

After a time a successor to Grim was found, who seemed to have so many of his ways, that it was declared his spirit had returned in this new shape, and the dog was, on this account, named Redivivo, contracted into Vivo for ordinary use. It was this dog that corresponded with the squirrel. His portrait is given by George in a letter: "I wish you saw my dog, a Skye terrier, considered one of the finest of his kind, though some of my lady friends hold that the uglier a terrier in ladies' eyes, the more beautiful he is in gentlemen's. I am sure, however, that you would admire my dog, with his long silver-grey, soft hair, steel-grey drooping ears, finely feathered tail, and mild brown eyes. He has a long body, short legs, and great broad feet like a mole's. He is good temper itself, and as full of fun and sagacity as a clever child. Indeed, I call him my son, and my little nieces always salute him as their cousin."

It will be seen from these quotations that the love for animals shown in boyhood continued undiminished, and while it afforded pleasant relief from the serious cares of life, it contributed to the buoyancy and freshness so characteristic of him.

Among the friends made by George wherever he went, were little girls from the age of two years upwards. He was a great favourite with them, and promised to marry several when they got the height of his stick. The courtship was chiefly carried on by an exchange of valentines each year, and it *did* prove a little inconvenient when the young ladies had come so far to years of discretion as to be found taking private measurements of the stick, by which their fitness for matrimony was to be tested. His interest in the children of his relatives and friends was great. While in London in 1854, he spent a night in the house of

a fellow-chemist, being almost a stranger to his hostess. Next morning he entered the drawing-room, where she happened to be alone, and said, on bidding her farewell, "Whenever I receive kindness and hospitality from friends who have families, I make a point of remembering their children in my prayers. Yours will be so remembered henceforth." To one of his little brides a tender interest attaches, as the subjoined memoranda show :—

"In the island of Arran, in the summer of 1852, it was our privilege to have George Wilson for a day or two as our guest. We had not known him previously; but as was his wont, he glided at once into the warmest corner of our hearts, and ever after kept his place. The secret of his influence was love, and the knowledge that even in its happy interchange 'it is more blessed to give than to receive.'

"He was especially attracted by our little Lucy, a child of four years, whose winning ways and bright intelligence delighted and surprised him. She met his advances cordially, and from that time he always called her his betrothed.

"The intellect then prematurely developed continued to brighten, and apparently to strengthen, for a year or two, culminated at the age of six, and then, under the clouding influence of brain disease, waned gradually, and before dear Lucy had attained her seventh birthday, had touched the western horizon, where, though speechless, it still faintly glimmers, and where we trust it will continue to do so, till it sinks into the light of heaven.

"George Wilson, as all who knew him will readily believe, became ever more and more tenderly interested in his afflicted bride; and we do not think that any more striking evidence could be presented, at once of the deep humanity

of his nature, and of the spirituality which through grace he had attained, than the following quotation from a letter which he wrote after hearing read some memoranda which had been made by a faithful attendant of poor Lucy, of sayings well worthy to be remembered."

"*May* 16, 1859.

"I was deeply touched by the memorials of dear, gentle, blessed Lucy, you read me to-day, but had not the courage to ask you for a copy. To-night, however, on trying to recall her words, I find I can do so very imperfectly, and I would feel deeply grateful if you granted me a transcript. It should be very sacred in my eyes. Lucy is to me so truly an object of affection, and now, in addition, so much an example of the blessed Saviour's special love, that I would very highly prize what I ask. Unless you have a great objection, do grant this desire of my heart.

"I deeply sympathize with you both in the anguish which such a trial must beget; but with a happy issue out of her great affliction so certainly, and, please God, so unremotely awaiting dear Lucy, I do not wonder that you bow in unrepining submission to Him who doeth all things well.

"And when we consider that each of us, in the depth of even natural sleep, is as helpless as your silent sufferer when in the grasp of her malady; and further, that there is certainly much less physical agony than from the movements of the limbs we infer there must be, we may surely think that to be with Christ as Lucy, spite of her bonds, even now is, is 'far better' than to enjoy the soundest unblessed slumbers, which shut out not only the world, but the very sense of God, from hundreds who never suffered a brief pang.

"We may yet find that He who has told us that the first

shall be last and the last first, has been peculiarly overflowing in revelations of his goodness and mercy to those who, like dear Lucy, seemed to the thoughtless left alone.

"And how cheering is the assurance that the Holy Ghos 'intercedeth for us with groanings which cannot be uttered.' Her inarticulate sighs are translated by the Advocate with the Father into prevailing prayers, and, presented by Him, we know how they will be answered.—Yours very affectionately,

"GEORGE WILSON."

A series of visits to the Crystal Palace in 1851, while the guest of his kind friends, Mr. and Mrs. Tomlinson, was a source of great enjoyment. "To me the whole was unspeakably, unutterably inspiriting, refreshing, and edifying." After quitting the "poem in glass and iron," and spending a short time with his cousin, Alexander Russell, in Hampshire, he returned home apparently in better health. It was therefore with surprise he learned from a medical friend, that at that very time a large cavity in his lungs had led the doctors to believe a few months would bring him to the grave. It healed up partially, however, and for some time hopes of permanent recovery were entertained. Here is part of a home letter during this journey :—

"MISS JEANIE,—Which am your brother, and was much pleased to hear that the painters—Mrs. M. I am sure never intended that the wax—and bored four holes in the round piece of wood—which is a new paper and much—the ser mon last Sunday—at the Polytechnic—a stone heavier—and Dr. Voelcker stated that—they are not shrimps but prawns—and rose at seven o'clock. Dear Jean, such is the condition my mind is reduced to by the anxieties attendant

on awaking myself, rising at seven, shaving with cold water, looking out clean shirts and collars, and other painful and harassing duties. You will too plainly see that the power of continuous thinking is gone, and that the mind wanders distressingly."

While in London in 1854, giving evidence before a Committee of the House of Commons, the death of his cousin, John Russell, after a lingering illness, made him hasten home, as once before, in 1839, to be present at the last services of love. "For all this whirling and night travelling I was to pay. The sleeping volcano in my lungs was roused from its slumbers, and the day after my return saw me prostrate in bed, with a sharp febrile attack, headache, semi-delirium, and cough. Rest, starvation, and a big blister, soothed the volcano to its old condition of mere muttering."

"My work in London," he tells his kind hostess, Mrs. J. H. Gladstone, "which I expected to be a mere whirl of business, turned out not only a work of great pleasure, but a period of religious refreshment such as I have not enjoyed for a very long time, and the illness I have had has deepened this, for though it was not severe, it was sufficient to remind me afresh how feeble my hold upon life is, and how ready I should be for the great change. Blessed things, too, are taught us in illness, such as health cannot teach, and I have risen from my sick-bed with a subdued and grateful heart, praying to be taught to serve Christ more and better. . . . I felt it a great privilege to get back to church to-day; to hear again my own dear minister's pleasant voice; to hear our own folks sing (and famously too) our beautiful hymns, and to join in the commemoration of the death of my blessed Lord and Saviour." "It is a comfort I rarely

enjoy," he adds to Dr. Cairns, "to meet Christian chemists, and the pleasure is great when those who spend much of the day burning incense before the *idola tribus et specus*, are found to devote their most sacred hours to burning incense of another kind, on another altar, to another God. It was unexpectedly, and all the more delightfully, a time of great spiritual refreshment, and I could have said, when I contrasted my expectation of a week of weary chemical hair-splitting, with the actual week of profitable religious conversation and exercises, 'God is here, and I knew it not.'"

His visit to London in May was followed by two months of work. At their close we find him saying, "I am now very jaded, and thankful to do as little as possible. This is not the season of the year when even I generally cough, but since April I have been coughing and blistering my side; and the stethoscopists talk ominously of some new quarter of my damaged lungs where mischief is threatening or begun. I have been running a race with Death since I reached my majority, and he'll have the best of it before long, if I don't get further ahead of him than I have been recently able to do. There is this difference between contending with moral and physical disease, that every victory over the former makes you stronger for the next fight; but beaten or victorious in your battles with illness, you come off permanently weakened."

Having gone to Rothesay to recruit, he writes from it on August 26th, evidently with effort, for the letters are crooked and unshapely. "My sword-arm or pen-arm is suffering from a wicked rheumatism, which makes writing an unwelcome and rather scrawly performance, therefore my words shall be few. . . . In reply to your queries, let me say that my lungs are fairly damaged in a new quarter, and a worrying cough proclaims this, and adds to the trouble;

nor can such a state of body exist without a sympathetic fever being lighted up, and vexing the whole system. It is no new condition for me to be in, and I have acquired a little experience in dealing with its annoyances. There are two good symptoms: I eat like a man who has a living body; and I have a very composed spirit, unless when fretted by the talk of others. To be alone, or only with Jessie, as I am here, is the pleasantest condition of matters, according to my present mood." Often had his hopes of improvement in health been met by days and nights even more wearisome being allotted to him. So was it to be now. About a fortnight had been spent in Rothesay, when one morning, seeing a strange fish lying on the beach, he dropped down the low embankment which separated him from it. Endeavouring to guard against the fall which his lameness might have caused, he overstrained the right arm, and broke the bone near the shoulder. Among strangers, and in lodgings far from comfortable, the accident was doubly distressing; but his quiet calmness and gentle patience failed not. Kindness was received from unexpected quarters, and his friends, as usual, showed devoted love. One of them, Dr. John Struthers, no sooner heard of the accident than he started for Rothesay, to satisfy himself that the arm was properly set, and having spent an hour, was obliged to return home. With George the anxiety was to spare all possible distress to absent friends. "I lay," he wrote afterwards, "through the long nights, with a weary cough, a lost vacation, and a shattered frame, intensely realizing how much sorrow Jessie, mother, and uncle, were enduring for me." To his mother he dictated a letter the day after the accident. "Nothing but my right arm, being the disabled one, keeps me from writing to you myself to assure you I am very well. I trust you will not

distress yourself with the thought that I deserve any great amount of compassion or sympathy. I deserve, indeed, rather a severe reproof for my inconsiderateness in allowing a queer fish to tempt me to forget that I was not so good at clambering over walls as formerly. As we shall soon be with you, and will write every day, I hope you will not allow this accident to discompose you. I shall be up walking in a couple of days, and will probably be in general health all the better that I shall be utterly unable for a week or two to make use of my pen hand."

Another note to her, says :

"DEAR MOTHER,—I hope to be with you in a week. To-morrow I shall send you some verses I made to help me through the night. They are nothing particular."

The verses were the following :—

CAMERA OBSCURA.

Silent, dimly-lighted chamber
Where the sick man lies,
Death and Life are keenly fighting
For the doubtful prize,
While strange visions pass before
His unslumbering eyes.

Few of free will cross thy threshold;
No one longs to linger there ;
Gloomy are thy walls and portal ;
Dreariness is in the air ;
Pain is holding there high revel,
Waited on by Fear and Care.

Yet, thou dimly-lighted chamber,
From thy depths, I ween,
Things on earth, and things in heaven,
Better far are seen,
Than in brightest broad daylight
They have often been.

Thou art like a mine deep sunken
Far beneath the earth and sky,
From the shaft of which, upgazing,
Weary workers can descry,
Even when those on earth see nothing,
Great stars shining bright on high.

So within thy dark recesses,
Clothèd in his robes of white,
To the sufferer Christ appeareth
In a new and blessed light,
Which the glare of day outshining
Hid from his unshaded sight.

Silent, dimly-lighted chamber,
Like the living eye,
If thou wert not dark, no vision
Could be had of things on high;
By the untempered daylight blinded,
With closed eyelids we should lie.

Oh my God! light up each chamber
Where a sufferer lies,
By thine own eternal glory,
Tempered for those tearful eyes,
As it comes from Him reflected
Who was once the sacrifice.

After returning home some weeks later, he writes to Dr. Cairns "a *few* lines, for my arm is still very stiff, and aches with a little work, to thank you for your kindness, not in formal words, but none the less with a grateful heart. I hope I have learned something more of God's judgments and mercies than I ever knew before. I went to Rothesay in a humbled spirit, craving most of all rest, and seeking to spend a season of exhaustion and enforced quietude in self-examination and submission to God. In this spirit the trial He sent came not as something strange, but as if it fitted into the daily discipline of the life I was leading. And now I look back on the last two months with a more lowly, chastened, and grateful heart than I felt towards my Saviour

before, and desire more than ever to confide in Him." "I got great good," he says to Mr. Macmillan, "from the long, quiet, and often sleepless hours. How soon, alas! the whirl of business banishes the thoughts that were so welcome in the silence and lowliness of sickness! How difficult it is to live to Christ in the struggle of daily contention, and to keep one's-self unspotted from the world!"

His wonderful recovery, time after time, from severe illnesses, evinced an amount of vitality which was scarcely looked for in his apparently feeble frame. Again and again did his medical friends look on him as almost brought back from the grave; yet there he was, claiming no compassion, and bravely doing a strong man's work in the world. It cannot be doubted that, ever after his experiences of 1843, the perfect calm and serenity of his mind gave the body every chance in its favour.

To his fellow-men "the personal feebleness of the genial presence" made him all the dearer. A tender reverence usually marked their intercourse with him, though of this he seemed unconscious, having much of that simplicity of character retained by few beyond the years of childhood, and which possesses a nameless charm when united to full-grown powers of heart and mind. The impression made on his kind hostess, while visiting London in 1851, may perhaps better convey to others a realization of his bearing in general society than a lengthened description could furnish. "The very first impression, preceding all others, was wonder at the *life* that was in him. I had been prepared to see an invalid; a man whose constitution had been severely tried, and whose health was at that time very precarious. His letters had previously made us acquainted with his genial nature; but although we anticipated many gleams of the same humorous and kindly spirit in his conversation, yet we naturally

expected hours of lassitude and seasons of depression in one who had suffered so much, and was still suffering.

"And when he came among us, there was nothing in his external appearance to destroy the impression. An invalid, physically speaking, he certainly was; the marks of weakness were on him, and the very texture of his small hand betrayed unusual delicacy. I almost trembled at the thought of such a man being exposed to the excitement and fatigue of London at that busy time. I expected day after day to see him return from the Great Exhibition thoroughly worn out and exhausted in body and mind. But no; the spring and elasticity of his nature were such that he never seemed tired. From morning to night, abroad or at home, the same cheery spirit possessed him, the same wonderful *readiness* for everything which presented itself. If he felt fatigue, he never showed it in any other way than by keeping quietly in an arm-chair after his return from the Exhibition; but even then he had not the attitude of one taking rest, but the lively, playful, emotional manner of a man thoroughly refreshed and at ease.

"The life that was in him seemed to triumph over all bodily infirmities; it gushed out in kindly thoughts and words, and happy turns of expression, which enlivened all around him. There were those present during his visit who had endured recent and severe affliction, yet they never found anything discordant in his mirth; it was so genial, so tender of the infirmity of others; so considerate and forbearing towards all mankind. And this life which was in him manifested itself, not only to those who could appreciate it fully, and who could admire the aptitude of his illustrations, and the quaint humour of his retorts; but it was poured out freely and generously on others, who must have been less sensible of its value; on young persons and

children; nay, even on domestic animals, who came in for a share of his friendly talk, and looked as if they understood it."

To those unstrung by broken health and the depression almost invariably resulting from it, he was so often held up as an evidence of how much of life's best blessings might yet remain for all who had power to lay hold of them, that it was sometimes laughingly suggested to him that his peculiar "mission" in this world was to comfort invalids. But not only negatively did he effect this; his sympathy with sufferers was such as to make any sacrifice for them a pleasure; and no consolatory letters or sickbed visits were ever more welcome than his.

Looking at this phase of his life, we cannot but be struck with the gratitude which each attack of illness brings out more and more fully. With heaven-taught eye he sees how immeasurably greater is the spiritual gain than the temporal loss. His medical knowledge made him fully aware that, step by step, he was steadily approaching the dark valley; yet it never seemed to lessen his interest in earthly things, or curtail the plans for work in every department, for which a long lifetime could scarcely have sufficed. The only deception he ever practised was that of concealing from those whose affections were bound up in him, his knowledge of the state of his health. So skilfully was this done, that, while themselves keenly watching every change, and hoping against hope, they believed him unconscious of much that filled them with harassing anxiety, and not till after all his sorrows were over did they learn from letters to others, that to him all had been as an open book. It is needless to add, that no small amount of self-denial and self-command were called for in carrying out this affectionate purpose.

"Could I escape exposure to cold and fumes and much talking," he says, "I should do very well; but my calling is not a very helpful one to damaged lungs, and I am not without unwonted anxieties concerning the winter." "God's will be done. If His chastening hand is to be laid again upon me, His sanctifying Spirit will be sent also, and He who suffered for me will help me to suffer." While in bed from a severe attack of local inflammation, with high fever and great pain, he writes to Dr. Cairns: "I have gathered spiritual instruction from this lesson, and could enlarge thereon, but the flesh is weak. God's mercies are truly as overwhelmingly great as they are altogether undeserved;" and a few days later he says:—

"DEAR JOHN,—'I sing the sofa,' *i.e.*, I write from it, a great step towards convalescence. I begin with this fact, which I beg you will communicate to the H— and J— families. It is downright dishonesty and cruelty to permit others to expend on our sufferings more sympathy than they deserve. Let, therefore, these good people be notified that now, I am so well, that if they utter any expressions concerning me, it must be those of thanksgiving. . . . How different the thoughts of health and illness are! One thing especially is impressed on me by every successive attack of the latter. I refer to the feeling that one must despair of building up a firm faith in Christ in the great majority of cases of sickness, if it is all to do from the very foundation, and the disease is in any way rapid or mortal. If your objective experience is at all like my subjective one, you will earnestly warn all against deathbed repentances. In probably two-thirds, at least one-half, of the cases of fatal illness, before alarm is felt, pain—or what is far worse, unless the agony be tremendous, sickness—has prostrated

the intellect, and clogged or maddened every emotion. Consecutive thought is impossible ; meditation, reflection, or even distinct apprehension, greatly weakened, often out of the question. Who dare expect in such circumstances that the long-despised mercy of God shall be experienced, when the very power to listen to a verse of the Bible, or to understand it, is gone, and memory is palsied ; or, worst of all, has no promise to remember, or one stay or rock of strength to fall back upon? God's mercy is infinite, and reacheth to the eleventh hour, and is often glorified and manifested at it. Yet, beseech your young people to commit, commit, commit to memory the Bible. They'll find the precious comfort of it when sickness comes. And the elders will see that the 'hope set before them' is so realized in health that it shall only require to be 'laid hold of' when sickness comes. To attain unto this is to be, with the Holy Spirit's help, far more the great object of my life than it has hitherto been. The review of the last three weeks shows such abounding mercies, favours, love—my cup literally running over with them—that the pain, disappointment, fear, and discomfort, have passed into the background already, desponder though I am." A year later he tells the same friend : "I am leading the very quietest of lives, and yet it is as happy as when I was busier. I am broken in to an indoor existence, and do not feel that trouble in getting through the day that active men must feel when first reduced to draw coal-waggons at a mile an hour, instead of being special engines at a mile a minute. And though I have no progress to report in the way of bettered health, but the opposite, and begin seriously to contemplate the great possibility of having to submit to an ugly operation, yet the pain I suffer is quite bearable, my intellect is clear, and there are many more mercies than miseries in my cup.

Do not whisper or hint to any one about the possibility of an operation being necessary. It might reach the folks here and terribly distress them. The thing may not be necessary, and need not therefore be talked about. I speak of it to you that you may know my stand-point, which I cannot explain to many people, who wonder they do not see me at church, although they know that I am able to lecture.

"I turn from the self-magnifying morbid introversions of an invalid, to something much safer for me, and more interesting to both of us. I think I have been able to live nearer to God during the last three months than I have ever done before. He has granted me a greater share of faith and patience than I have enjoyed previously; a deeper sense of brotherhood with Christ Jesus, and of communion with the good Spirit. I am graver than I have often been; but I have a joy and peace in believing, which I would not exchange for the lightness of spirits that has often fallen to my share."

"*March* 1850.

"I have been in the house all to-day and yesterday, confined with a cold which this ungenial weather was certain to distribute to me, among its other recipients, as one sure to give it suitable accommodation and some days' lodging. I have only once been absent from church this winter, a great cause of thankfulness; and my health in general has been very fair this year. . . .

"You tell me I show less vivacity than I once did; and you are not wrong; but the change noway discontents me. The last two years have greatly sobered me, and my life between twenty and thirty seems now to me a scarcely intelligible and very sorry drama, to be repented and made better without any delay. I met this day week a lady whom I had not seen since I was some seventeen, nor was

there anything to bridge over the long space between our two meetings. It has set me to meditate a great deal, this glimpse of myself at seventeen, with all that filled the years onwards to thirty-two obliterated; and I realize better than I might otherwise have done what a changed being I am. I lament not the loss of my vivacity, for I had more than enough of that volatile ingredient, and can well afford to let some of it evaporate. One thing, however, does alarm me, the fear, namely, lest I should settle down into a sombre, prosaic mortal, leading a dawdling, semi-valetudinarian, coddling life, which were worse even than the alternate and unequal rises and falls of my youthful, wayward moods. The fires of my heart, which once blazed, are all burned out, or deliberately extinguished; and without making vows, which would be foolish and even sinful, I feel every day the circle of my imaginative rovings shorten its diameter, and the thirst of my earlier ambition cease, although, like the thirst of a fever-patient, it has never been slaked. All this is well, if the empty heart be filled by Him who should from the first have been its occupant; but I have seen in others, and I fear in myself, an exchange of dissipation of mind for unprofitable idleness, and this the more that my mode of life carries me out of the busy current in which I formerly at least struggled to swim, and my health has embayed me in a side pool, little influenced by the tide."

The various effects of affliction he expresses to Daniel Macmillan in these words:—"The furnace of affliction puffs away some men in black smoke, and hardens others into useless slags, and melts a few into clear glass. May it refine us into gold seven times purified, ready to be fashioned into vessels for the Master's use!" Expecting a visit from this friend in 1850, he tells him, "I am reputed to be much graver than I was, but when not in sickness or pain there

are lots of fun in me yet." After the visit was past, he laments the inability to enjoy his friend's society, for "those two demons, rheumatism and dyspepsia, had gone shares for my poor body, and I was ill at ease. Night after night I spend in prosecuting a discovery, the steps of which are, that I awake in pain on one side, and after a period of vague uneasiness, say sleepily to myself, 'It is the other side on which you sleep quietly,' and so I turn to the other side, and after three minutes find out I was mistaken, and that it was the other side, and the other follows the other, till uneasy slumber puts an end to the unceasing revolutions. One is poor company after such nights; but I hope when I next see you I shall be reasonably well."

The humorous way in which his illnesses were frequently mentioned could not fail to provoke a smile, even from the most tenderly sympathizing. One or two specimens must suffice. "I have not, like some unhappy people, an aching void, but an aching *plenum*,—*i.e.* I am full of aches. I might quote, as suitable to my case, the words of the beautiful Scotch song, 'I leaned my back against an aik,' only modernizing the last word into ache, as of course it should be." Being unable to join a proposed excursion, he explains the reason: "To tell you the truth, I have been for some time tired of lecturing behind a table (like a shopman selling goods over a counter), and I thought I should like to try Curtain Lectures for a change. Accordingly, I took care to catch a cold, and fell to coughing, and finally betook myself to bed the night before last, and as the curtain course is not yet finished, I remain there still, lecturing to a very attentive, sympathizing, and appreciating audience, consisting of my bedfellow *Grim*, who looks upon coughing as a kind of barking, and thinks it quite in his way." In allusion to what he had suffered at the hands of surgeons,

he sometimes spoke of himself as "copiously illustrated with cuts."

His sister Jeanie is told, "Give a rap on the table when you get this (that's the way spirits take to communicate thought), and venerate the postman who gave two (was it?) raps when he handed it in.

"I have been vexed with the cares that belong to a landlord. Into an apartment in my possession, which I intended to shut up, indeed to fill up, a rogue found his way, bent on making, not paying a rent. He would not pay the taxes; on the other hand, he taxed me. He would not rest even at night, but compelled me to get up at any hour to look after him. I besought him at least not to disturb me during lecture, but the rogue declared that he hated fumes, and would interrupt me in the midst of the most angelic eloquence. His Christian name I don't know (indeed he is not a Christian). His surname is *Bronkeetis*. He comes of an old family, and cheats people into the notion that cough is a simple word, which will get simpler by use, as at last it does by changing its spelling, and ending in coffin. People don't like to spell it that way, but all the folks who begin with coughing as the right fashion, end with the other version of it. The Homœopathists, for example, advise the administration to sick people of cocoa, because they are afraid to recommend coughy, which the honest grocers spell coffee." At another time he speaks of his "everlasting cough, a Malakhoff which neither French nor English are likely to take."[1] A coughing performance, in which he is engaged at intervals, through the night as well as day, "excites," he says, "so much applause, that it is invariably encored."

Excitable temperaments like his cannot but have times

[1] Written during the siege of Sebastopol, with its Malakhoff tower yet unattacked.

of depression, but these he concealed so well that they were often unsuspected. "Cheer up, my good friend," he replies to a desponding letter, "I can say, '*De profundis clamavi;*' I look back with great horror at some of the dark and dreary images which an overworked brain doomed me to have for daily and nightly visitants, for weeks together, since Christmas onwards. Only now [in April] is the heaving black sea of gloom beginning to smooth its waves, and the horror of great darkness to pass away. The fault lies in great part with the body, and that I hope to mend by a week in the country." "My roving fancy," he tells John Cairns, "is ever building castles in the air, or digging dungeons in the nether depths. Well! well! there is a cure even for that, and for the benefit of poor dreamers like me it has been written, that 'neither height nor depth' shall be able to separate us from the love of God in Christ Jesus our Lord. You need not tell me I am wrong in my exegesis; if I were right, I should not say it to such a dweller in the Interpreter's house as you. But I am right, so far as regards myself, at this present moment."

The two letters which follow are given nearly entire, the first being addressed to a literary friend, and the second to Mr. Daniel Macmillan :—

"It is always difficult to write to a distant friend, for one cannot know but very generally how he is, and the tone of a letter may be all out of keeping with his condition.

"A strong feeling of this makes me reluctant to write this evening, for I remember too well my own risings and fallings, and wayward changes when ill, to be at all confident that I can say anything that will be acceptable to you. Yet if I should fail, you will give me credit I know for good intent, and I will on my side lay claim to a deep and sincere

affection for you. One thing has struck me when ill myself, and when visiting others who were ill, viz. what depths there are in every human heart, which only God can fill! How impossible it is to find words in which to express to others some of the thoughts which stir our souls most. A remembrance of this gives me a very humble impression of what I can do for another spirit on whom affliction is laid, and makes me rather look to Him who in all the afflictions of His people is afflicted, and who, inasmuch as He hath suffered being tempted, is able to succour us when we are tempted.

"Were I beside you, so that we could speak together, we should soon know each other as we are, and have open, frank communion together. As it is, to write is to draw the bow at a venture, and perhaps send the arrow wide of the mark.

"I shall do no more, accordingly, in this letter, than send you affectionate good wishes. After making twice over such a recovery from the severest inflammation of the eyes as I did, although my constitution is so bad a one, far, far worse than yours, so bad indeed that no Office will insure my life, I look forward to news of your betterness with cheerful hope; and strongly feeling that I helped to overtask your eyes by the demands which the Life of Cavendish made upon them, I also look forward to your sending me some work to do for you, whilst your eyes are resting for the future labours which the great Taskmaster has in store for them. And although out of our own works we shall never get contentment, and ought not, if our standard is a high one, it is assuredly a blessed reflection that God has given us grace to think of Him in what we have done as authors, and that however imperfectly we have laboured to honour Him and serve our fellows, He has not left us without some token that He has approved our work.

"May He give us more and higher work to do for Him, and as a preparation for it, subdue our wills to His, and make us like our blessed Saviour. I have a poor cousin dying, and the spectacle of his sufferings has made me stop fretting over lesser pangs, which seemed less than nothing compared with his. The great mystery of suffering in a world so beautiful, and orderly, and full of law as this, we shall never understand on this side the grave, and personal suffering ever brings back the problem in all its insolubility, to tempt the aching heart to aim at its solution again. But for all practical ends there is an adequate solution of the great mystery in the fact that the Lord Jesus Christ himself suffered as none of His people are called to do. I cannot always think of the Saviour's sufferings. They are too awful for aught but very solemn meditation. The Roman Catholics and Methodists alike cultivate a mode of referring to the agonies which Christ endured, which I shrink from, although I do not doubt that many of both retain a most reverential feeling for the Lord.

"But in periods of great sorrow and suffering, the thought that a holy, sinless, perfect man, was the subject of a lifetime of trial, wound up by a death of the most painful kind, and this with His own consent, and by the appointment of God the Father, comes home to my heart as a warning against being perplexed overmuch with the mystery of suffering when it is laid upon myself. And when to this thought is added the other, that this great sufferer was Himself God, I feel that fully to realize this truth is the surest way of preventing that eating of one's own heart, which, when ill and sad, we are all so prone to do."

"It is not about B—— I am going to write. This is Sabbath evening, and I desire to think of other things;

and most of all to sympathize with you in your present sorrow. Think not that I despise tears, or count them unmanly. If I said once that I did not weep, it was to explain an allusion in a verse, not to parade the fact, or to boast of it.

"Weeping, or not weeping, is neither here nor there as a sign of courage or the want of it. It is dependent in great part on a man's physical make, and the action of a little gland. When I am prostrated my mind eats inwards, and broods in morbid silence and gloom. Tears would be a relief, but they will not come. I would be thankful if they did, and take no credit that they do not.

"I can, I think, altogether sympathize with you, in the great reluctance with which you must have left Cambridge just when a new term was beginning. When one is exceedingly ill, one is engrossed with the calamity which compels everything to yield to it: and when well, how much there is to do! But to be neither very ill nor very well; to have a certain fitness for work, and conviction of its importance, and yet no sustaining relish or enduring capacity for it, this is a sore trial of faith and patience, as months of its endurance have again taught me.

"Yet I am sure such seasons will often, with God's blessing, teach us what exulting health and terrible agony cannot, and are as needful to ripen many of us for another world, as a cup running over with mercies, or sharp strokes of affliction. Great torture is not only maddening, but enslaving; it makes the mind reel, and fills the heart with terror. Full health is self-reliant, God-forgetting, and unheeding. A dreary season, such as you see before you, often permits a more profitable study of God, and carries us farther forward in the divine life, than the extremes of ill-health or its opposite will do.

"I do not overlook, in saying this, that the moral regimen

suitable for one mind will not serve another, and that what profited me may not benefit you. I have nothing but my own experience to speak certainly from ; but, after all, we are of like passions and infirmities, and will be more or less affected in the same way by the same causes.

"Neither do I forget that a mind unstrung for secular study is enfeebled for religious work also. How often have I this summer felt a mean, childish gladness, that the chapter to be read was a short one ; and been as apathetic as if there were neither God nor devil in the universe.

"Nevertheless, we have a promise of the Holy Spirit's help in our religious work, which, as it is supernatural in nature and source, is not at the mercy of sickness. It does not, in reference to this, at all matter what theological theory we hold as to inspiration. We both believe that one of the good gifts which Christ's death procured for us is the sanctifying presence of the Holy Ghost in our hearts. We cannot distinguish His workings from those of our own spirits, yet we can believe that where it may please God to cut us off from relish and capacity for the ordinary affairs of life, He may yet increase our spiritual powers, and teach us more of His 'deep things,' and make us liker Himself. The incapacity, indeed, in the one direction may be a provision for greater endowment in the other, and the shadow which ill health casts over the soul is often the most befitting background, and lets us realize best, by the contrast, the presence and the brightness of the 'Light of Life.'

"I have been preaching to myself all this while, and thinking through my pen. I have said nothing that you do not know. It would be a sad thing for us if we had to indulge in novelties. But I know how thankful I am to get a hint from a religious friend, though he should but repeat

a verse I had been reading the moment before. To me the prayer of the humblest Christian, however defective he may be in other gifts and graces than those which God grants to the weakest brethren, is always comforting and refreshing; and it brings you and me closer than railways could if we can rejoice together, as having 'one faith, one Lord, one baptism.' You please me much with what you say of the hymn. It is not the expression of unfelt or put-on emotion, nor does it pretend to be poetry. Before I die I hope to gather together a set of hymns for the sick-room, and if I don't live long enough to accomplish this, I can comfort myself with the thought that there is abundance already.

"And now I will trouble you no further. Your namesake, the prophet, was in a den of lions, and God shut their mouths. Yours is a trial of an opposite kind, for the den and the lions are in you. Their mouths can be shut by God also, and I pray that they may. I never can cease admiring that beautiful request of the Prayer-book, 'A happy issue out of all their affliction.' It is so humble, so undictating to God, so moderate, yet so ample. God give that to us both. Amen. In His way and time, and in this world and in the next. . . .

"To be well enough to work is the wish of my natural heart; but if that may not be, I know that 'they also serve who only stand and wait.' God will not require healthy men's labour from you or me; and if we are poor in power and opportunity to serve Him, our widow's mite will weigh against the gold ingots of His chosen apostles.

"I am sure we all pray too little, and trust God too little; but the topic is inexhaustible."

We cannot be certain which hymn is spoken of in the preceding letter. Not a few were "Songs in the Night," and

are memorials of times of more than ordinary suffering. In ignorance of the special one alluded to, we shall give "A Hymn for the Sick-room," which has been gladly welcomed by other sufferers :—

Sufferer, lift thy weary eye!
Help is with thee, Christ is nigh;
God regards thee from on high.

All thy groans go up as prayers,
Through the Spirit's interceding;
Each unworded murmur wears,
At God's throne, the air of pleading;
And in all thy woes He shares,
Who was once the Victim bleeding.

Though He is, and was, all sinless,
He remembers mortal pain;
Holy though He is, and stainless,
On His form the scars remain,
And He looketh now, though painless,
Like a Lamb that hath been slain.

He is not a great High Priest
In all sympathy deficient,
From all human things released,
For Himself in all sufficient;
To be man He hath not ceased,
Though He is, as God, omniscient.

All thy bed, in all thy sickness,
He will make with His kind hands;
All thy fainting, fears, and weakness,
Anxious thoughts, and fond demands,
All thy patience, faith, and meekness,
Reach Him where on high He stands.

Faint not, then! God ever listeneth,
Answereth ere the cry is sent;
Whom He loveth, those He chasteneth,
Taketh what He only lent;
For Himself our ripening hasteneth
By His sorest punishment.

Need of patience have we all;
Only through much tribulation
Shall the holiest God doth call
Pass through their ordained probation,
And no longer dread to fall,
Certain of their soul's salvation.

Before passing on to new scenes, it will be well to note a few more of the changes which the years we have been considering did not fail to bring. The death of a much-loved aunt, his father's sister, near the close of 1851, left a sadness which was deepened in the following spring by the loss, by marriage, of his youngest sister from the fireside circle. Though his judgment was convinced that he should rejoice with her in the formation of a new circle of home joys, yet somehow his heart never acquiesced in the absence of the "Benjamin" of the household. Shortly after her settlement in England, he quitted the house in Brown Square, after eight memorable years spent in it, removing to a large and commodious laboratory, and becoming a resident, along with his mother and sister Jessie, with his uncle, in a house built by the latter, in a pleasant suburb of Edinburgh. Here the remainder of his life was happily spent, amidst much to gratify his love for the simple and the beautiful. "Elm Cottage" is now inseparably associated in the minds of many with thoughts of him. The name was chosen, on account of the elm trees beside it, by his brother Daniel, who had scarcely taken possession of one-half of the house (it is a double dwelling), before an appointment to a professorship in Canada carried him and his household far from their native soil. Not long after he left, Alexander Russell, his cousin, settled in Australia with *his* household, so that of the large circle with which George Wilson was surrounded in our first chapter, only two now remained beside him. All these were changes which left

bleeding wounds in his sensitive heart; and to none of them could time reconcile him. We wonder not that he is graver than of old, but rather that *any* of the buoyant fun survives. "I have had," he says in 1853, "to look at this world as full of the most serious realities this summer, from a point of view which seems new to me; but it is all for the best."

In one way alone could he still unite the broken circle. A letter to his brother, at a time of domestic trial, gives the receipt, one that cannot fail to cement in bonds beyond the reach of earthly changes. It is written in the last year of his life.

"Illnesses are the times that make me despise penny postages, as premiums on tortoise and snail paces, and long for electric wires from door to door all round the world. Were we beside each other, I should be seeking to comfort you with all kinds of medico-surgical reasonings, showing that there was more of good than evil in particular symptoms. But as we are, I can only wait for the next mail with patient impatience, and hush alarms by repeating the blessed words: 'Rest in the Lord, and wait patiently.' Yet, after all, I can do more. When we kneel together each evening to offer our prayers to God, you are never forgotten. Jessie and I are the priestess and priest, and she reads the lesson; and when we pray, commending all our beloved ones to the mercies of God and the consolations of Christ, I seem to go round the world, passing from Birkenhead, where Jeanie has had many anxieties and trials; to you with your mingled sunshine and shade; to Alick at Adelaide, still refusing to be comforted for the loss of three children; and to Brazil and Hanover, whence Mina and her sister write claiming relationship, and beseeching remembrance in our prayers.

"I say to myself with a sigh, Are they dead? Are they

living? Is it well or ill with them? But there is no reply. I can only pray for them; but why say *only?* Is there any thing, my dear brother, we can do for each other, or for those we love, more certain to serve them than prayer? That it is something, even my faithless, sceptical heart and fault-finding spirit has realized. To the God of all grace I commend you."

CHAPTER X.

THE SCOTTISH INDUSTRIAL MUSEUM, AND THE CHAIR OF TECHNOLOGY.

"I doubt my body
Will hardly serve me through: while I have laboured
It has decayed; and now that I demand
Its best assistance, it will crumble fast."

PARACELSUS.

THE Session of 1854–55 was begun with gloomy anticipations as to health. "My lungs are not what they should be; and the only thing that could do them good, rest, I cannot get. I have large classes this winter, and must do all I can for them. I leave the issue in the hands of God, for I cannot help myself, nor does any outlet appear." Intelligence received then of the death of several relatives and much-loved friends, fell heavily on him, when less able physically to bear the shock. Amongst these was Professor Edward Forbes, who but a few months before had entered on the duties of the Natural History Chair in the Edinburgh University. His welcome by his old student friends was of the warmest, and unbounded hopes of the new career opening to him filled the hearts of many. In the summer of 1854 he gave a short course of lectures, and was entering upon his first winter session, when a few days of suffering carried him off. On the 24th of November, George writes

to his brother:—"I have very sad news to communicate. Edward Forbes died last Saturday, after a short and painful illness, and I can convey to you no adequate idea of the sadness and dismay with which his unlooked-for death has filled us. . . . He was a man of genius, and united to it so much good sense, prudence, discretion, kindliness, gentleness, and geniality, that he was very largely and widely honoured and loved. I loved him far better than I ever told him; but he credited me, I believe, with great affection. To myself the loss is irreparable. Short-sighted mortals that we are, he and I had been arranging all sorts of conjoint labours, and this is the end of it! With nearly every one there is the feeling that he was taken away, not from the evil to come, but from the good that he would have done." That Edward Forbes reciprocated this admiration may be gathered from his saying of George Wilson, —"How sad to see so splendid a jewel in such a shattered casket!" To Dr. Cairns, George speaks of the loss as a great personal grief. "His death takes another idol away." While to another he writes, "I feel as if all the brave and young and fair were dying, and a mere wreck like me allowed to float on. Let us not, however, my dear friend, think of satisfying God by our works. I try to live as a dying man (which I am), with faith in a living Saviour, whose finished work leaves me nothing to do in the way of meritorious labour, though it lays on me the greatest obligation to work for Him and do His will. It is a blessed thing to know Christ, as one not ashamed to count the meanest of us His brethren, who has promised to exalt us to a share in His glory, and invites us all to come unto Him and find rest. He is a far more gracious Master to us than any of us are to ourselves, and His service is perfect freedom."

His cousin, Alexander, had lost a boy of five years on the passage out to Australia; he died in sight of land, and the first possession of his parents in the new country was a little grave. His beauty and winning ways had made Harry deeply loved by all who knew him, and his death was regarded as no common loss. On learning his bereavement, George writes to the sorrowing father :—"Scarcely am I home from Rothesay before we are all startled by the unlooked-for decease of my young, brave, frank, and skilled colleague, Dr. Richard Mackenzie, who had volunteered to accompany the troops to the East, and perishes of cholera after winning the utmost esteem and gratitude of the Highland soldiers, and risking his life at the battle of the Alma. The shock of that is scarcely past, before we are plunged into new and deeper grief by the death, after a very short illness, of Edward Forbes, in the very height of his glory and usefulness; and I am in tears for the loss of that beloved friend, when your letter arrives with its afflicting news. . . . I have given up making idols; they are all taken away. Harry I thought of as full of life and energy; and destined, with that remarkable mechanical genius of his, to become great, and good, and famous, long, long after I had found rest in the grave. He was so beautiful—the most beautiful boy I ever saw—so loving, so lovable, what had Death to do with him? Was I not here, and others, who had digged for death as for hidden treasure, and could even rejoice at the prospect of going to be with Christ, which for us is far better than a dying life here, that he should be summoned, and we left! I have asked myself the same question regarding the death of Mackenzie, and still more regarding the loss of Edward Forbes, whose death is universally felt to be a public calamity. But I can find no answer, and expect none on this side the grave. I am

learning, I hope, more and more to trust God, and to put faith in Christ; and to leave these, and a thousand other black mysteries to be explained, if God please, hereafter, and if it does not so please Him, to be left unexplained."

"I have agreed very reluctantly," he tells his brother Daniel, "to write Edward Forbes's life. I have been so importuned to become his biographer, that I have assented. I loved him very dearly, and knew him well, and the task is in that respect very welcome; but I had labours of my own to work out which must be put aside.[1] I enclose some verses on his loss, which embody two ideas of his own applied to plants and animals." The verses alluded to appeared in 'Blackwood's Magazine' for March, 1855, with a short explanatory preface:—

"The lines seek to apply, *mutatis mutandis*, to the mystery of the great Naturalist's death, certain canons which he enforced in reference to the existence of living things, both plants and animals. Their purport was, to teach that an individual plant or animal cannot be understood, so far as the full significance of its life and death is concerned, by a study merely of itself; but that it requires to be considered in connexion with the variations in form, structure, character, and deportment, exhibited by the contemporary members of its species spread to a greater or less extent over the entire globe; and by the ancestors of itself, and of those contemporary individuals throughout the whole period which has elapsed since the species was created.

"He further held, that the many animal and vegetable

[1] "I hope I shall live to write Edward Forbes's Life," is an expression in a letter about this date. But this hope was only partly fulfilled. The amount of labour demanded from him by the duties of the subsequent years, left almost no leisure for literary work. Every attempt was made to get on with it, but at his death it was left unfinished. It has since been completed by the hand of another.

tribes or races (species) which once flourished, but have now totally perished, did not die because a 'germ of death' had from the first been present in each, but suffered extinction in consequence of the great geologic changes which the earth had undergone, such as have changed tropical into arctic climates, land into sea, and sea into land, rendering their existence impossible. Each species, itself an aggregate of mortal individuals, came thus from the hands of God, inherently immortal; and when He saw fit to remove it, it was slain through the intervention of such changes; and replaced by another. The longevity, accordingly, of the existing races can, according to this view, be determined (in so far as it admits of human determination at all) only by a study of the physical alterations which await the globe; and every organism has thus, through its connexion with the brethren of its species, a retrospective and prospective history, which must be studied by the naturalist who seeks fully to account even for its present condition and fate.

"Those canons were applied by Edward Forbes to the humbler creatures; he was unfailing in urging that the destinies of man are guided by other laws, having reference to his possession individually of an immaterial and immortal spirit.

"The following lines, embodying these ideas, contemplate his death, solely as it was a loss to his fellow-workers left behind him; their aim is to whisper patience, not to enforce consolation:"—

Thou Child of genius! None who saw
The beauty of thy kindly face,
Or watched those wondrous fingers draw
Unending forms of life and grace,
Or heard thine earnest utterance trace
The links of some majestic law,
But felt that thou by God wert sent
Amongst us for our betterment.

And yet He called thee in thy prime,
Summoned thee in the very hour
When unto us it seemed that Time
Had ripened every manly power:
And thou, who hadst through sun and shower,
On many a shore, in many a clime,
Gathered from air, and earth, and sky,
Their hidden truths, wert called to die.

We went about in blank dismay,
We murmured at God's sovereign will;
We asked why thou wert taken away,
Whose place no one of us could fill:
Our throbbing hearts would not be still;
Our bitter tears we could not stay:
We asked, but could no answer find;
And strove in vain to be resigned.

When, lo! from out the Silent Land,
Our faithless murmurs to rebuke,
In answer to our vain demand
Thy solemn Spirit seemed to look;
And pointing to a shining book,
That opened in thy shadowy hand,
Bade us regard those words, which light
Not of this world, made clear and bright:—

"If as on earth I learned full well,
Thou canst not tell the reason why
The lowliest moss or smallest shell
Is called to live, or called to die,
Till thou with searching, patient eye,
Through ages more than man can tell,
Hast traced its history back in Time
And over Space, from clime to clime;

"If all the shells the tempests send,
As I have ever loved to teach;
And all the creeping things that wend
Their way along the sandy beach,
Have pedigrees that backward reach,
Till in forgotten Time they end;
And may as tribes for ages more,
As if immortal, strew the shore;

"If all *its* Present, all *its* Past,
And all *its* Future thou canst see,
Must be deciphered, ere at last
Thou even in part canst hope to be
Able to solve the mystery
Why one sea-worm to death hath passed,—
How must it be, when God doth call
Him whom He placed above them all?"

Ah, yes! we must in patience wait,
Thou dearly loved, departed friend!
Till we have followed through the gate,
Where Life in Time doth end;
And Present, Past, and Future lend
Their light to solve thy fate;
When all the ages that shall be,
Have flowed into the Timeless Sea.

The letters to his absent brother give a representation of his life, as once before on their first separation, and to them we shall occasionally refer for information, and for glimpses at passing events. In the opening month of 1855, he writes to Daniel, "The reactionary lassitude following eleven prelections last week, has slowed my brain-engine, and I look at some duties, and with a hardened heart refuse to fulfil them. I made stern resolutions at the beginning of the winter not to overwork myself, or to take extra lectures; but the art of saying No is not learned in a day, and though I have succeeded in uttering it several times, I could not escape some demands on me." Amongst these demands were three lectures to the Architectural Institute, 'On the Chemistry of Building Materials,'[1] at the request of its members. In the closing lecture a hope is expressed that through the instrumentality of the Industrial Museum, the

[1] "Transactions of the Architectural Institute of Scotland for 1854–5."

knowledge of the qualities of Scottish building stones will receive large additions.

"The many deaths among relatives and friends have made us very grave. I am soberly cheerful among strangers, and try to live day by day as a dying man; and though it is a most imperfect copy of the life of my Lord and Master, I know that I love Him more than ever I did, and I hope to love and imitate Him better and better." The preparedness for death, of which these words give evidence, was about to be put to a searching test. After a lecture at the School of Arts one evening in the beginning of February, he lay down to rest, but was aroused by the rupture of a blood-vessel, and the loss of a considerable quantity of blood. His indomitable spirit showed itself in his coming down next morning as usual to breakfast, and actually lecturing twice that day, though his ghastly appearance showed that he was little fit for such exertion. When the weary day was over, and he was again left for the night, hemorrhage returned a second time, and consciousness nearly failed him. He was unable to summon assistance, and all that lonely night his bed seemed surrounded by the spirits of those of the family gone before. Some words of a psalm which he had read just before lying down kept a place in his mind through all its waverings: "I shall not die, but live, and declare the works of the Lord."

Medical aid was obtained next day, and so probable was the return of the hemorrhage deemed, that on the third night there was little hope that he would see the dawn. It passed safely over, however, and he gradually regained strength in a way that made the words of the psalm seem prophetic. At first the hemorrhage was supposed to proceed from the lungs, but ultimately it was ascertained to be from the stomach, resulting, in fact, as was discovered two

years later, from a great enlargement of the spleen, unsuspected at the time. The following was received by Dr. Cairns shortly after he was able to leave bed :—

"*Feb. 7th*, 1855.

"DEAR JOHN,—

I am persuaded
That neither Death, when the faint soul, invaded
By its last enemy, awaits the strife ;
Nor all the boundless energies of life ;
Nor all the awful might that dowers
Angels and principalities and powers ;
Nor present things, nor things to come ;
Nor height, though higher than the heaven's dome ;
Nor depth, though deeper than the Gulf of Gloom ;
Nor aught that in the universe finds room,
Shall be able us to sever
From the love of God, which ever
Is in Jesus Christ our Lord.

"What madness, you will say, what audacity and folly, to meddle with that sublime passage, and spoil it by a paltry paraphrase! To which I say Amen; and yet I went and did it whilst lying awake in darkness on Sunday night. It insisted on being paraphrased, and won't trouble me again. . . I have had a perilous attack, and was close upon the grave. . . . I was in bed both times, and on the second occasion, when there was a gush of blood, a very dying-like sensation came over me. God has still preserved me, and I trust to do Him some service. I have enjoyed much peace of mind this winter. Pray for me, that I may be kept from fainting or failing till He calls me." Ten days later he writes to Daniel from his rooms in town, having resumed duty to the extent of one lecture a day; "I had a narrow escape from death, for the loss of a little more blood would have ended matters; and indeed I lost

between fifty and sixty ounces, which is rather too much. It is a strange feeling your blood gushing from you. I had no pain, and only slight sickness, and I felt very calm."

"Since I broke my arm, I have been disciplined into a mental peace I never knew before, and in spite of fluctuations such as must occur so long as this mortal body is carried about, I look with composure to what God may send. I have been getting knocked down, and then up again at short intervals, for the last twelve years, and have more than once felt that I could have been thankful had the *coup de grace* been given; but always with convalescence, the cowardly, unchristian desire to escape the trenches departs, and I go forwards to Sebastopol again. Valetudinarians like me are apt to become selfish and lazy, and I must fight against the tendency." And on March 1st he adds, "I am better, and convinced that the doctors mistook my case; although the loss of the blood was equally weakening whencesoever it came. It would have been poor consolation to have had as an epitaph—

> "Here lies George Wilson,
> Overtaken by Nemesis;
> He died, not of Hæmoptysis,
> But of Hæmatemesis."[1]

While convalescent, but still feeble, there was handed to him—on his birthday, as it happened—an official packet, containing his appointment as Director of the Scottish Industrial Museum, then in contemplation. "A week before I got the appointment," he tells Daniel, "I had no expectation of it. The talk regarding it began nearly a year

[1] By mistaking his case is meant the supposition at first held, that the hemorrhage proceeded from the lungs, for which hæmoptysis is the technical name, while hæmatemesis means bleeding from the stomach.

ago, but I told no one, no promise having been made me." After mentioning the kind efforts of friends in his favour, without solicitation on his part, he goes on to say, "All this was last April, and then the thing slumbered. . . . After Edward Forbes's death, my health was objected to by some one, and I gave up the slightest hope of the thing, so that the appointment took me wholly by surprise." Inquiries on the part of Government as to who was the person most likely to be acceptable to the general public as Director of the Museum had but one reply, and thus the appointment was made. Coming at a time when his health was more than usually uncertain, Dr. Wilson, before accepting it, consulted his medical friends as to his physical ability to fulfil the duties of the directorship, and only did so on their assuring him that his health might in all probability be better than previously, and that it need form no barrier to his undertaking the duties of the post offered him, which seemed to give promise of greater rest, and to call for less exertion. To Dr. Gladstone he writes of it, "Besides the organization and control of a museum of applied Chemistry, it includes what is equivalent to a lectureship on Technology. The attractions in the new appointment are not less of responsibility, concern, and care, but less drudgery in mere elementary teaching, and no night lectures. You, I am sure, will wish me God-speed, and ask our Lord and Master's blessing on a great Educational Scheme, which will either be a great boon or evil to us, but, please God, only and largely the former."

As in a few months the new duties became more clearly defined, we shall defer allusions to them. The following letter, addressed in May to a scientific friend, gives glimpses at the mainspring of his life :—

"This last year has been very full of calamities in the

circle of my friends, and of trials of flesh and spirit to myself, as it has been to you. I gather from your letter, as I trust I can say for myself, that the national disasters and sufferings of our countrymen, and the state of Europe and the world, and God's dealings with ourselves, have not passed like the winged wind over our heads, and left no mark behind.

"Amidst much thoughtlessness and forgetfulness of God, and many sins which exact their own punishment, and many which seem far too light to me, though in God's eye they are not light, I have a rejoicing feeling that a greater peace of mind and surer hope in Christ are mine than was the case some years ago. If it please God to grant me longer life, my prayer is for more freedom from engrossing earthly cares, that I may do more to serve my blessed Lord and Master. And if I am not to live, may I die able to say that I know in whom I believe.

"Is it not a strange thing, and not to the credit of our Christianity, that whilst we congratulate each other on worldly advancement, on additions to titles, on increase of salary, on professional work well done, on enlargements of families and the like, we do not congratulate each other on victories won over Satan, and new proofs of allegiance to Christ? Let me not, on this occasion at least, be wanting in rejoicing with you that you have chosen the better part, and not gone to Prussia. I could not judge for you; or advise otherwise than I did; but you who know how far your religious liberty would be compromised, and preferred that it should remain unshackled, to risking the faith which you have professed in Christ, and perilling the salvation of your children, have reason to ask all who love you, and esteem eternal life at its due value, to join with you in thanking God that through so great a trial you have passed and gotten the victory.

G. W.

"They accuse Christians of a selfish caring for their own souls. They forget that in this world every man must take wages; that no amateurs are permitted; that invisibly beside us stand at every moment the Lord of Light and the Prince of Darkness, to press into our hands the wages we have earned, whether we will or no; and that beyond the gates of death they will appear in their own persons and give us the last instalment, those abiding wages which shall multiply themselves through eternity. I will not remind you of what Christ has promised to those who prefer everything to Him: I will be content to remind you that to have grace given us to prevail against temptation is a proof that the Saviour already loves us, is also a present joy, and the assurance of joys yet in store."

After a visit to London, on Government business, in June, a short but hard-earned holiday was spent, two months later, at Melrose, whence he writes:—

"DEAR MOTHER,—This place is called Mel-Rose, or Rosa Mellis, *i.e.*, Honey Rose, from a famous rose which used to grow here, and drop honey from its leaves. That was in the time of the pious old monks, but in these degenerate days, the roses have ceased to drop anything but their leaves, and occasionally a caterpillar, and are turned into cabbage roses. . . . Yesterday we discovered the Tweed, after a day and a half's search for it, and found it very thick and muddy; I am afraid it has been adulterated." He spent some hours of each day writing under the trees of the Abbey Garden, kindly thrown open to the public by its proprietor, Mr. Tait of Prior Bank. "I am taken for an artist, and have been seen by many parties sketching Melrose Abbey; and why should I take a fit of egotistical obstinacy, and deny that I ever used the old

Abbey so ill as to attempt to draw it. Mr. Duncan Maclaren is not a man easily deceived, and Dr. Brown belongs to a profession famous for its acuteness. They both saw me sketching, and it would be rude in me to contradict them. However, I can't find the sketch anywhere in my portfolio, otherwise I would send it.

"The mutton here is excellent, and for a very good reason; the sheep feed upon apples. You'll be saying that's some of my nonsense, but it is not. I have been studying the ways of the sheep that share the garden lawn with me. We are now good friends, and they feed close to me, taking me, as Jessie affirms, for a shepherd, whom in my hat and plaid I much resemble. The lawn is in large part an orchard, and my friends look out diligently for the fallen apples, and munch them up as if they were turnips. To-day the gardener mounted a tree, and fell to shaking down the apples, whereupon a wise lamb stepped forward, proposing to try their quality, and an altercation arose between it and the gardener, ending in the victory of the latter tyrannical person. You see the advantages of travel. I might have remained long enough at Elm Cottage without learning the singular fact in natural history I have just recorded. Nor is it the only one I have learned, as you shall find when we return. It would be wrong to come back from Sir Walter Scott's Land, and not romance a little. His own house, by the way, is one of the least romantic we have seen; but the country is wonderful, wonderful, such a country as even Adam and Eve, when the fiery-sworded angel drove them forth, might have wandered into with delight. Luckily for you my paper is done, or you would have had a rhapsody." Again he says, "You would admire the Abbey garden. The old grey towers look over the walls, with the ghosts of departed monks sitting sorrowfully on the broken

pinnacles, and gazing on the desolation and usurpation below. A flock of merry swallows wheel about the battlements, darting out and in between the poor ghosts without touching them.

"The garden is open to all *genteel* people, so that *I* walk through it boldly. A genteel cat paid me a visit in the place, and after salutations with its wreathed tail, passed on. Of another visitor, a large tame rabbit, I am a little doubtful that he had a right of entrance. He looked at me somewhat suspiciously with his great bright eyes, but I suppose he intended only to eat the weeds. He was well dressed, better than myself, a handsome fur cloak, and other things, as the old writers say, 'conform.' My greatness was acknowledged yesterday in a highly satisfactory way. A clown walked into the garden straight up to me, and begged to know 'if I selled any berries?'"

A daily drive in the beautiful neighbourhood diversified such pleasures. One day, finding that no newspapers could be obtained in the little town, he drove to Galashiels, about five miles distant, and after purchasing a copy of the "Scotsman," proceeded to read it on the way home. "This is decidedly worth a penny," he said to his sister; "read that." What she read was a notice of his appointment as Professor to the newly-founded chair of Technology. The official document apprising him of it reached by a later post. Though it took him by surprise at the time, he had been aware such a step was in contemplation. It was suggested first by the professors in the Edinburgh University, to whom it seemed more advisable to have the director of the New Museum amenable to their laws, than to have in him one who might set up rival claims as a public teacher, with a salary from Government, and valuable museums at his disposal. This recommendation was approved by the

Edinburgh Town Council, and the proposal brought by the Board of Trade before Government. Dr. Wilson made no solicitations, and merely expressed willingness to accept such an appointment, should it be made.

To Dr. Cairns he writes :—"It will bring with it, I hope, some bodily rest, although it does not add to my wealth or diminish my responsibility ; and I know too well that this world must be to every wise man a scene of struggle, and to every humble man a place of sorrow, to expect that I shall have less of its cares or woes than before. With unfeigned sincerity I can say that I have rejoiced at the prospect of serving my Saviour more and better through the influence it may give me, and the prayer is often on my lips, and oftener in my heart, that I may be made bold and wise enough to confess Him before men.

"I see so many of my scientific and literary friends devoured by the cares of the world, and fretted by its little troubles, that I tremble lest I too become a selfish, scheming worldling. Only God's grace, I know, can keep me unspotted from the world ; but *it* can, and your prayers will not be wanting, that so long as I have a place in this world I may be kept from the evil that is in it.

"I wish I could visit you ; but it may not be. My duties will seriously begin on October 1st, for I have my laboratory still to keep going, and to gather wonders for my museum from the four quarters of heaven."

The same desire is expressed at the close of a long chemical letter to Dr. Gladstone :—"As for the Chair, I trust and pray that it will increase my power to serve my blessed Lord and Master." His appointment was welcomed with unqualified delight by the public generally. One of the periodicals of the time remarks :—"The formation of the Industrial Museum would in fact have been a matter of

comparatively little importance to the community generally, had not this appointment [that of the new Chair] been made; and had the Government sought through the length and breadth of the land for a person fitted for carrying out the objects contemplated by it, they would not readily have found one so well qualified as Dr. George Wilson." A writer in the "North British Review"—believed to be Sir David Brewster—attributes it in great part to his labours in reference to Colour-Blindness. "We have no doubt," he says, "the researches which it [the work on Colour-Blindness] contains, and their practical relation to the safety of ships and railway trains, which he was the first to point out, were among the grounds of his appointment to the Chair of Technology, or Industrial Art, which has recently been founded by the Crown in the University of Edinburgh."[1]

It was no small puzzle to the public at first, what *Technology* meant. In December, 1855, he reports, "Technology prospers, and people are learning how to spell it." A definition given before leaving Melrose, to his married sister, was probably the first explanation of the word from him.

"DEAR JEAN,—The Professor salutes you, and grieves over the absence of Technology from your dictionary.

"Let us see what it means, by analyzing it into syllables, beginning with the final ones. *Nology*, or *knowledge of*, must mean 'the acquaintance with;' so far good; but what is 'Tech?' A pre-Adamic word, I take it, signifying, as well as I can make out, 'things in general.' Altogether, then, we reach the full idea of the Knowledge of Things in General.

"You will find the word in no dictionary. They had to wait till a *knowledgeable* man like me was born, before they could coin the word. A stupid Greek scholar, if you met

[1] "North British Review," February, 1856; Article "Colour-Blindness."

him, would tell you that 'techne' meant 'art,' and 'logos' meant 'science,' so that Technology signifies the science of the Arts, as if my derivation did not mean the same. *Science in its application to the Useful Arts* is the meaning of the word.

"In short, I will lecture on Dyeing, Glass-making, Porcelain, Baking; on Hats, Shoes, Bleaching, Ink, Gold, Iron, and, as I said before, things in general. On the objects of my Museum, and the Arts connected with them, my plan will be as follows:—If a Shoemaker comes to the Museum, I'll talk to him about nothing but Hats, and screw information out of him about Shoes. When a Hat-maker arrives, I will pour into his ears all the learning I have acquired from the Shoemaker, and extract from the Hatter information to give the Cobbler on his next visit. In this way I hope to do credit to my appointment. . . . It will bring me no addition of salary, rather the opposite, but I shall get more rest, and, please God, I will try to do some good in my Museum."

Before entering on the duties of the approaching Session, a pleasant week was spent in Glasgow, at the meeting of the British Association.

Of the opening address by the President for that year, George writes, "Last night the Duke of Argyle gave his address. You will see it in full in the newspapers, and find a bit that made my head hang down, about a new Professorship. I was glad I was in a quiet corner, when named so unexpectedly." The allusion was the following:—"I am happy to say that, in connexion with the New National Museum, which is being organized for Scotland, there is to be a special branch devoted to the industrial applications of Science; and that a new Professorship, one which has long existed in almost all the continental universities—that of

Technology—has just been instituted by the Government. I am not less happy in being able to announce that to that Chair Dr. George Wilson has been appointed. The writings which we owe to the pen of Dr. Wilson, and especially his beautiful Memoirs of Cavendish and of Dr. Reid, are among the happiest productions of the literature of science."[1]

When his induction as Professor drew nigh, Mrs. J. H. Gladstone received the following humble petition :—

"Do you happen to have a gown to spare? A black gown? A silk gown? A gown not much the worse of wear? You will be surprised at me making these requests, but there is a person here known to me, who would willingly go to a meeting, but cannot appear at it without a gown; and though such poverty on the part of a respectable party may surprise you in rich England, I am sorry to say, that the individual on whose behalf I would interest your kind heart, has only two gowns, and these such singular articles of dress, that an appearance at church in either would infallibly provoke even the minister to smiles, and lead to the gown-wearer being put out of doors. . . . The poor unfortunate for whom I beg has in vain solicited the assistance of the kind ladies of this quarter. Here the parties willing to give gowns are either too tall, or too short, or too broad, or too thin; or the gowns are either too good or too bad, or not all silk, or too fine silk; and the end is likely to be, that the poor thing will not be able to attend the meeting, in spite of all my efforts.

"Will you, then, my dear Mrs. Gladstone, give a look over your dresses, and if you can spare a reasonably good black silk gown, not excessively much the worse of wear, send it by post to me, and I will be much, very much, your

[1] "Report of the British Association for the Advancement of Science, for 1855," p. 81.

debtor. For, to tell the truth, I am not without a selfish interest in the matter; the party for whom I beg being one for whom, as I will honestly confess, I have a regard, I will not say greater, deeper, more romantic, more self-denying than I have for any one else, but still, as my heart acknowledges, a regard of a totally different kind from that experienced for all other persons in the world. Yet this peculiarly beloved person, whom some day I hope to commend to your indulgent kindness, is not good-looking, nor handsome, nor graceful, nor stately (a foot shorter than John), nor attractive in any way; but nevertheless, and in spite of the poverty which would make most gownless persons an object of dislike, I have for years, more than I care to mention, clung to the unfortunate, and now take courage to beg a gown for my companion since childhood.

"To prevent mistakes, please address, 'Gown for Dr. George Wilson, Professor of Technology, University of Edinburgh.' I have been begging for myself; the Queen, excellent Sovereign, has sent me her commission, and I am now Professor George."

A few months later he writes to a friend in London, who had attained a similar dignity, "I longed to ask you how you liked your gown. I seldom wear mine. Since I left my native hills and my kilts behind me, I find pantaloons come more natural. Do you wear caps? I do not. Do you favour curls or bandeaux? I allow a few curls *au naturel.* An apron, I feel, would not come amiss when acids are splashing about, but I have not ventured on one in public. Is it the case that you wear a coral necklace and bracelets of students' hair? I confess to a fur boa, but otherwise cultivate a severe simplicity in my attire, eschewing all tartan, though not, you may suppose, without a sigh."

One more *jeu d'esprit* before proceeding to notice the

labours of the new sphere. In the spring of 1855, Dr. Wilson formed the centre of a merry group, seated one bright and sunny day on the grassy banks of the Doune, beside the old castle, about nine miles from the Bridge of Allan. While one of the young ladies—Miss Black, now Mrs. Henry Lees—arranged an impromptu cushion, to add to his comfort, she volunteered the promise, that should he ever be a Professor, she would work a cushion for his Chair. The promise, lightly made, with little expectation of its being claimed, was faithfully fulfilled, and her beautiful cushion, on which flowers were worked in beads, was an object of much pride, and a source of much pleasure to its recipient, the donor being one whose friendship he highly valued. The following verses were sent in acknowledgment :—

THE CHAIR OF TECHNOLOGY AND ITS CUSHION.

The Queen of England in her might,
She made a wondrous Chair ;
She beckoned to a Scottish wight,
And said, "Ho ! sit thou there !"

The Scottish wight, he bowed his head,
And stammered an apology ;
"Nay ! sit thou there !" the Queen she said,
"In my chair of Technology.

"To all my subjects, now I say,
I make thee a professor ;
Of this great Chair, by night and day,
I make thee sole possessor."

It was a strange, unheard-of Chair,
And every part was new ;
The wood that made it was so rare,
No one knew where it grew.

All through the land the people went,
And stopping at each college, "Hey !"
They cried, "Oh ! tell us what is meant
By this Chair of Technology ?"

The base was broad, the back was long;
It was an ample Chair;
The arms were wide, and very strong,
But it was very bare.

The feet on which it stood were stout,
The sides were stiffly barred
With angles like a Siege-Redoubt;
And it was very hard.

The wise Professor tried to take
Possession of his Chair;
But every bone was like to break,
Though he sat down with care.

"Take back thy gift, oh, Queen of might!
Take back thy gift I say,
I cannot sleep a wink by night,
And cannot rest by day."

"Nay! I will not take back from thee
My gift," the monarch said;
"Go, ask from other queens than me,
A cushion for thy head."

* * * *

Beside the Clyde's far western shore,
There lived a gentle fairy;
Queen Mima was the name she bore;
She sang like a canary.

Into a *Black*bird she could turn,
Whene'er she had the will;
And all the singing birds would burn
With envy at her skill.

To her the sad Professor
Addressed his mournful prayer,
"O lady, be Redresser
Of this so wrongful chair!"

No sooner had the fairy heard,
Than she began to sing,
"Come hither, every bird
That soars upon the wing."

The birds of every feather
Came trooping o'er the sea:
"O lady, tell us whether
We can do aught for thee!"

"Ye tawny eagles, stretch
Your pinions to the sun,
And from Golconda fetch
Diamonds ere the day is done.

"Ye swift-winged falcons, perch
Upon the highest hills,
And with your keen eyes search
For gems among the rills.

"Ye wandering swallows, fleet
To far Australia's shore;
And ere the night and morning meet
Bring back its golden ore.

"And you, ye stately sea-birds, wing
Your way o'er Indian waves,
And precious pearls and corals bring,
Plucked from the ocean caves."

She waved her hand: away they flew.
She waved her hand, and lo! with gems
And gold returned the busy crew,
Fit for a thousand diadems.

With wondrous skill, and magic powers,
She strung the pearls and wove the gold,
And changed the gems to buds and flowers,
Which never will grow old.

These magic flowers she made to grow
Upon a cushion soft as air,
Full of the down as white as snow,
Which swans upon their bosoms bear.

And just as the Professor
Had almost ceased to sigh,
And seeing no Redresser,
Had laid him down to die,

Behold! a silver voice was heard,
"Hush! I have heard thy prayer,
The cushion of the Blackbird
Shall glorify thy Chair."

And suddenly, as morning skies
The clouds with glory gild,
The fairy-cushion smote the eyes,
And the whole Chair was filled.

It draped the Chair on every side,
It left no angle bare,
It made the Chair a place of pride,
And not a place of care.

And now the once afflicted wight,
To queens makes no apology,
But sits by day, and dreams by night
In his Chair of Technology.

To this lady he writes in the end of that October, with the characteristic mingling of pathos and humour: "My sense of a hold upon life is so feeble (for illness after illness cheats us out of vitality, and lessens one's hope and courage), that I am thankful to remember I have some who think better of me than I deserve, and count themselves my friends. . . . Had Her Majesty consulted my doctors, she would have given me a sofa rather than a chair; but on chair or sofa, I hope to spend my allotted days on earth, so as to make none ashamed that they called themselves my friends." The cushion was not uncalled for, as very soon after entering on his appointment, he is compelled to say, "The Chair of Technology is not stuffed with down; a thorn or two stick out of it, and it requires cautious engineering to get into it with comfort to myself and others."

The inaugural lecture was devoted in great part to the definition of the limits he assigned to his Professorship. Its title, "What is Technology?" was welcome to the public, in doubt as to what it represented.

Speaking of the wide domain included in Technology, he points out that his brother professors have nearly all commissions as wide, nominally, and restricted in meaning only by common consent, by traditional custom, or conventional use and wont. "With the Industrial Museum, this Chair stands in organic connexion. My office, as Professor of Technology, is to be interpreter of the significance of that Museum, and expositor of its value to you, the Students of this University." Those desirous of knowing more specially the objects he had in view in the vast arena now opening before him, will find a clear statement of his position in this lecture, one of the few published in full.[1] We shall only further quote the closing paragraphs, with remembrance of the youthful dreams now realized by his having reached the goal then set before him as the object of his highest ambition :—"In conclusion, suffer me a reference to two things. There are few occasions on which it is becoming for an individual to refer publicly to what the French have taught us to call his antecedents; but I may be allowed a word on mine here. I came to this University some twenty-two years ago, fresh from the Edinburgh High School, without any prestige in my favour, any recommendations to pave my way, or introductions which should conciliate the good-will of a single professor. A mere school-boy I entered these walls, to pursue, like a hundred others, the difficult study of medicine, without any extrinsic advantages. I look back now with unfeigned gratefulness to the services rendered me by so many of the Professors. I stand indebted to a long list of them for help and encouragement at a time when these are most needed and most prized; and but for the kindness of more than one of their number, I should not be here to address you as their colleague to-day.

[1] "What is Technology?" Edmonston and Douglas, Edinburgh.

"I speak thus not to pay this University a passing compliment, for it does not need it; still less to imply that my case was exceptional, for it was not so at all; but simply that I may bind myself in your hearing to help the homeless and friendless students who become my pupils, as I was helped by my preceptors when I was homeless and friendless.

"Lastly, let me commend this new Chair to your goodwill and kindly aid. With its associated Industrial Museum, it constitutes a great additional centre of knowledge, from which light will spread over this land and over the world. I can but sow the seed. I have sown it to-day; I am honoured to do thus much; but the prediction, true in reference to all matters, is that 'one soweth and another reapeth.' I am not so selfish or so thoughtless as to wish it were otherwise. Institutions, like all other things, grow faster in these days than they did of old; but perennial things are still slow of growth, and the most enduring the slowest of all. We must be content to pluck the first fruits, and leave the full harvest to be gathered by those who follow. But that its first and last fruits may alike conduce to the glory of God and the good of man, is my prayer; and, therefore, we will confide it to Him who, eighteen hundred years ago, dignified and made honourable the humblest craft, by permitting Himself to be called the Son of the Carpenter, and who now stretches forth His divine hand to bless all honest, earnest labour."

Though the House of Commons had, in 1854, voted 7,000*l.* to purchase a site for the Industrial Museum of Scotland, no steps were taken in the erection of buildings for it till some progress had been made in collecting suitable objects. In the spring of 1855, the Independent Chapel in Argyle Square—which Dr. Wilson had attended as a place

of worship for the previous ten years—and the hospital adjoining, were secured, and in them stores of specimens quickly began to accumulate. As no laboratory or lecture-room was provided, Dr. Wilson continued to occupy those he had already in use. His class was taught under great disadvantages, the lecture-room being most inconvenient, and at some distance from the temporary depository of museum specimens. The introductory lecture was the only one given within the University walls for the first four sessions. The class was not imperative on the University students, and those who attended represented the professions of "general manufacturer, architect, engineer, farmer, merchant, baker, tanner, sugar-planter, sugar-refiner, teacher, doctor, and clergyman, besides young men entered simply as students, but chiefly training for industrial callings; as well as retired military, medical, and legal officers of the East India Company's Service, and amateurs." In spite of all drawbacks, above forty attended the first course, of whom six returned the following year to continue the study of the subjects included in the syllabus. Three years were required to go over its contents: the first course being devoted to Mineral, the second to Vegetable, and the third to Animal Technology. After preliminary special lectures, that of Mineral Technology branched out into a series of lectures on Fuel: Building Materials of Mineral Origin; Glass and Glass-making; Pottery; Metallotechny; Electro-techny; and Magneto-techny. Under the three latter heads were comprised the working of metals, and electricity in its industrial relations.

It was fervently hoped that in this new sphere, George Wilson would enjoy greater ease. His health had so long withstood the ravages of disease, with little apparent detriment to his general vigour, that many anticipations were

now formed more sanguine than at any previous period of his public life. People wilfully shut their eyes to all but the fact which they tried to impress on their minds, that he *might* live many years more, and even medical men who knew the frail tenure by which any such hopes could be held, argued favourably from the time of repose which seemed to them now before him. We have seen that he himself hoped for more rest as one of the advantages of his appointment; but so ardently did he enter on its duties, that the only rest obtained was from the necessity of more than one lecture daily, and that rest of heart arising from a sense of acknowledged worth, which the affectionate welcome of his fellow citizens had afforded him. For once the proverb seemed unsuitable, that "a prophet hath no honour in his own country," and his generous mind too readily received the impulse. His labours hitherto were now far surpassed, as if but a resting-place for a higher elevation had been attained. "I am determined," he sometimes said, "to let no day pass without doing something for my dear Museum." By *something* was meant not the daily duties of his post, but special efforts put forth. "The dear Museum," as it was usually called in private, absorbed every energy. How he begged and planned for it is well known in many parts of the world, though what sacrifices were made on its behalf are known but to a very few. The power of coaxing, in him almost irresistible, was brought fully to bear, and sometimes it was amusing to observe how, when presents were made to him, with the express statement that they were not for the Museum, he contrived skilfully to dispose of all arguments, and finally to deposit them on the public shelves. His friends soon got to know that the most welcome gifts were such as had the industrial collection in view, and acted accordingly. Evidence of his zeal and

success may be found in the annual report of this Museum for 1859, in which the models and specimens amassed in the four preceding years are reckoned at 10,350 in number. "If properly displayed, these would fill a space equal to that afforded by the Museum of Practical Geology, Jermyn Street, London; or to fully one-half that of the New National Galleries in Edinburgh."

Evening lectures, though not now imperative, were still undertaken occasionally. That the interest of an audience could be won over in favour of the Museum, so as to add to its contributors, was sufficient excuse for any additional labours. One scarcely knew at times whether to be more grieved or amused at the earnest simplicity with which he would urge this as a reason for work, such as his health made most unadvisable: "But, you know, they will help the Museum." Remonstrance was vain; the ardent spirit could not be restrained; "to die working," seemed to him an enviable fate. The desire was frequently expressed to an assistant, though never hinted at in the home-circle, where he carefully abstained from any such allusion. With the view of commending the Museum to the notice of the general public, he gave an address in January, 1856, at one of the monthly meetings of the Highland and Agricultural Society, "On the relations of Technology to Agriculture," which was published in the Society's "Transactions" for March, 1856. In it he speaks of the Industrial Museum as "one of those institutions which had become necessary by the altered condition of the world, and the felt wants of all the intelligent sections of the community." After showing in how many ways technology can aid agriculture, he closes with an appeal for their aid on behalf of the national collection. A month later, he delivered two lectures to the Philosophical Institution, Edinburgh, "On the objects of

Technology and Industrial Museums," which were afterwards published by request, in a local newspaper having a wide circulation among the working classes, and reprinted. "Granite and its Derivatives, including Glass, Porcelain, and Aluminium," was the title under which the lectures were announced, but these only formed a slender frame-work, from which many deviations were made. Those who have not had an opportunity of hearing him lecture will find in those under notice that combination of scientific facts with poetry, humour, and large-heartedness, which swayed his audiences irresistibly. While, as usual, asking their good offices towards the Scottish Industrial Museum, he made a special appeal to intelligent women, "If from no other motive than this, that they may thereby contribute to increase the means of giving an industrial education to women of the poorer classes, and to multiply the vocations which may keep them from starvation, misery, and crime." [1]

In March, by request of the Pharmaceutical Society, an address was delivered to them, "On Pharmacy as a branch of Technology," which has been published in the "Pharmaceutical Journal," for 1856. It may be supposed how large an amount of correspondence was called for by the infant wants of a national institution, forming no small item of each day's duties. We find in a letter the following statement :—"'Wanted, a Monkey from the Zoological Gardens to write letters to a philosopher's friends. No ape or baboon need apply. The strictest references expected and given. Apply at Elm Cottage, in the writing of the applicants, enclosing a witty, a stupid, and a pathetic letter.'

"You see to what I am reduced. Here has a letter from one Daniel Macmillan stared me in the face day after

[1] "On the Objects of Technology and Industrial Museums." Edmonston and Douglas, Edinburgh.

day, and reproached me with unfriendliness, ingratitude, shame*less*, shame*ful* conduct, indifference, cold-heartedness, selfishness, unbrotherliness, and deliberate wickedness : and not a monkey has answered the advertisement, or supplied even a stupid letter."

At the close of January he tells his cousin Alick :—"I was preaching a sermon last Thursday evening to the medical students in connexion with the Medical Missionary Society, and rejoiced to find I had courage given me to speak boldly (oh ! I trust, convincingly also) in the name of Christ. Nearer to Him ! nearer to Him ! is my daily prayer. . . . I am going to slave less, and now only help religious meetings, or strictly professional ones. My responsibility is much greater than before ; my physical fatigue, however, will be less. I live from day to day, feeling no hold upon life, but happy many times, and for long hours, although my temperament is not one which even the choicest mercies could rob of its native inquietude and sensitiveness. But all is well. I have great holes in my heart, and dreary voids in my affections ; but on this side the grave they cannot be filled, and I will work as hard as I can till the manumission comes."

He writes to his brother a month later :—"I am always vexed to see a Friday pass without a letter from me to you ; but I am often hard pressed, and since Christmas the weather has been a succession of rain, and east winds, and sudden frosts, which have engaged me in a battle from which I have come off but partially victorious. I am practising saying *No*, and improving in the utterance ; but I am still far from perfect, and I suffer in consequence. I resolved at the beginning of the winter to give four free lectures, and no more, and to give them to the first who asked them. Dr. Brown's Ragged Kirk got one ; Dr.

Chalmers' Territorial Kirk got another; the medical students a written lecture, under the auspices of the Missionary Society; and I made a speech for the Medical Missionary Society. Unfortunately, however, three of these fell on last week, and I had to sit in one of the Ragged Kirks without a fire for an hour on the pulpit steps, the fruit of all which has been a slight attack of hæmoptysis, now, however, passing away.

"Besides these lectures, I have had three on Technology, which are to be counted as the things to which NO cannot be said. I mention them that you may know why my pen has not been employed on your behalf."

"*April* 10*th*.

"We have had here an Eastern War, which has defied all meetings of plenipotentiaries, and still rages unabated. For a month, or some forty days, a dreadful Lent, the wind has blown geographically from Araby the blest, but thermometrically from Iceland the accursed. I have been made a prisoner of war, hit by an iciclè in the lungs, and have shivered and burned alternately for a large portion of the last month, and spat blood till I grew pale with coughing. Now I am better, and to-morrow I give my concluding lecture, thankful that I have contrived, notwithstanding all troubles, to carry on without missing a lecture till the last day of the Faculty of Arts to which I belong. But it was not possible to write to you sooner. Jessie and I propose to set off on the 12th for the Bridge of Allan, and thence I engage to write, furnishing all desiderata before next week's post."

On the 13th he writes home from the Bridge of Allan: "We reached this safely last night at half-past six. The band of music was of course at the station, and the people

took the horses out of the carriage, of course, and drew us into town. In a region so much visited by volcanoes and earthquakes as this, we could not but expect to find a great physical change. The hills have grown into mountains since last year, perpetual snow covers their summits, and glaciers are continually sliding down into the valleys, sweeping everything before them. The wind has blown so long from the east that most of the tall houses are bent double, and the little ones are turned round so that the back door has become the front. We succeeded, however, in finding our lodging, and duly entered by the proper door. Jessie, indeed, cannot see the differences I have described above, and affirms that there is only one new house. I leave you to judge whether she or I am correct. If people are to travel without seeing wonders, I don't see what is the use of travelling. The folks here evidently recognize me as Professor of Technology, especially those who never saw me before."

The subjoined letter to Dr. J. H. Gladstone alludes to a chemical discovery he had made :—

"BRIDGE OF ALLAN, *April* 28, 1856.

"DEAR INSPECTOR,—I really have the suspicion that I owe you a letter, and indeed I resolved as soon as I came here to write to you ; and why did not I? Because, after a few days' improvement here, and all disappearance of the hæmoptysis which had driven me from Edinburgh, I as usual began to work as if I were quite well. I was seized with a technological fit, and set off to explore a bleach-work, dye-work, and carpet-work in my neighbourhood. You can sympathize with the pleasure such visits give. To me they are mentally exhilarating in the highest degree. I like to see the machinery, the chemical processes, and not least, to

chat with the workpeople. But my stupid body always makes itself disagreeable. On this occasion, after returning much delighted, I lay down on the sofa to reflect on the sights I had witnessed; but it was soon stopped by coughing, and blood—blood, crimson blood. This stopped my letter-writing, and compelled quietness, counter irritation, and no more technologizing. I am better, but frail; and sitting in medical judgment on my own case, I am afraid that I must report myself decidedly lower down the hill than this time last year, and with less of my lungs useful than before. But it's all well; I am in God's hands. I pray neither to die, nor to live, but to be kept from the evil that is in the world. Jessie and I have had a delightful fortnight of Bible-reading, and talking and meditating, and worshipping, such as you and May can understand. . . . I am delighted to hear of your new chemical doings. . . . I have given you your new title at the beginning of this scrawl, but I would be glad to know if the following is the correct statement of the matter. If not, you must complain to the Mendicity Society.

"'THE BLOOMSBURY DETECTIVES.

"'On the 1st of January, in conformity with John Dalton's Act, Professor Faraday, in the presence of Dr. Hoffman and the Master of the Mint, added three equivalents of the nitro-prusside of sodium to five equivalents of the cobalticyanide of potassium, and seven equivalents of the iodide of methylammonium, which were mixed with water and shaken together. On April 1st the liquid was examined, and, to the consternation of all parties, the sixty-seventh part of an equivalent of hydrogen was found wanting. Information was immediately sent to the different Universities, the British Association, and the French Academy, but up to

last Wednesday no traces of the missing 67th could be found. It was then resolved to put the case in the hands of that active officer, Serjeant Gladstone of the Bloomsbury Detectives, who instantly started in pursuit of the unaccounted-for fraction, and we are happy to say, by pursuing a curve whose ordinates are as A is to B, so is C to D, succeeded late on Saturday in coming up with the missing fraction, which was immediately projected on paper. Her Majesty, on hearing the interesting announcement, immediately desired that Serjeant Gladstone should be made Inspector, and his portrait added to the Crime-an Gallery.'—(*No News*, February 30.)

"I cordially congratulate you, my good friend. It is a responsible office that of yours."

To his mother he says, "I have been resting two days after my technological exploits. It was a great delight to me to visit two works full of illustrations of chemical and mechanical science. In truth, the pleasure such visits give me is of a deeper and more delightful description than I could easily convey to most people, and I have totally failed to persuade that stupid body of mine that its only business was to carry me 'upstairs and downstairs, and in my lady's chamber,' wherever I pleased to go. An old grudge which it has against my soul has made it behave less obligingly than was desirable, but rest has made it sweet-tempered again, and it promises to be on its good behaviour in future."

After returning to town, an amusing instance occurred of the belief which seemed to pervade all classes, that he never could be appealed to in vain, either for information or help. Fireworks were to be displayed in celebration of the proclamation of peace after the Crimean War, and by the aid of Mr. Tomlinson he was able to meet the wishes of

the Provost and Council. In acknowledging his friend's kindness he says, "It seems to be supposed here that on the day when I was made Professor of Technology there flowed into my head the whole Cyclopædia of Useful Arts, and all the Encyclopædias and other treasures of knowledge, and in a liquified condition formed a well full to overflowing somewhere in my pineal gland, so that whoever is ignorant need only put down his bucket and draw it up full.

"One of my pupils asked me one day, what a harlequin's dress was made of. This was in the pantomime season, and the young man had been recreating himself at the theatre. When I shook my head in reply, and smiled, he interposed, 'Perhaps I have put an improper question?' I hastened to compose his fears, and promised a reply. But how was the momentous question to be answered? I used to know a fiddler of a chemical turn, who belonged to the theatre; but he and his fiddle had long ago vanished, I knew not whither, and he was my only dramatic oracle. What was to be done? My character as a technologist was at stake, and I was casting about for an introduction to that mysterious entity, Harlequin himself, when help came from an unexpected quarter. The sun would not rise in a proper manner in the opera of the Prophet, and I was waited on by an emissary from the theatrical manager, and requested to assist his Sunship, which by means of a lime-ball light I was enabled to do to the satisfaction of all. I bartered my light for light upon the harlequin's dress, and was informed it was made of the India-rubber elastic tissues, with triangular spaces at intervals of a pervious material to allow of perspiration. . . .

"After these experiences, I felt no surprise at being summoned to the Town Council to explain to them off-hand all about fireworks, which, as one of our municipal rulers was

pleased to observe, he did not doubt I had made special subjects of study. After that it would have been a despising of dignities to have hinted that a sky-rocket was above me, and I proceeded to descant on Roman candles with all the learning and precision, consistent with my attachment to Protestantism, which were to be expected from so experienced a pyrotechnologist as I am known to be. Well! well! I did my best, and you did better than my best, and I hand over the civic crown to you."

To be considered an authority upon things in general was no new experience. Even in the High School he was distinguished from the other boys in regard to this qualification. His classical master, Mr. Mackay, had a fancy for asking out-of-the-way questions when strangers happened to be present, to impress them with the fund of information possessed by his pupils. Soon perceiving George Wilson's fitness to do him credit in this respect, he used to call out at the appearance of visitors, "Wilson, make ready!"

After his appointment as Professor, his fellow-citizens seemed to look on him as their storehouse of knowledge, and very peculiar were often the demands made on him. While waiting for an audience, a gentleman one day informed the Museum-assistant of the purport of his visit, and was assured, in reply, there was no probability that Dr. Wilson could solve his difficulty. The assurance was vain, "For," urged the inquirer, "he knows everything." The belief of this man seemed one generally held, and certainly not without cause, for few applied in vain, and the assistance was given so cheerfully and readily as to leave an impression that he himself was the party under obligation. Once, while in London on Museum business, he was amused at being hailed on entering the Government office, "O, here's Wilson, he 'll be able to tell us;" and so the puzzle

over which they had been cogitating was immediately solved.

While addressing an assemblage of printers and their friends, at a social meeting in the Music Hall, Edinburgh, he showed incidentally a familiarity with their work, which led a young printer, on leaving, to speak of the speech "of the compositor." Being asked to which of the speakers he referred, he replied, "the one with spectacles," whose thorough acquaintance with their craft he imagined could only be the result of long practice in its details.

Allusion has been made in a preceding letter to a lecture delivered to medical students. It was shortly afterwards published along with other lectures,[1] by request of the Medical Missionary Society, at whose instance it was written. We have already quoted from it, as illustrating his experience on entering hospital practice. It grapples with the existence of evil, and apparent frustrations of design, pronouncing the solution of all that is inexplicable in the morphology and teleology of the mortal state, to be attainable only when design at last triumphs in the heavenly life. The strain pervading the lecture is to be found in others of his writings, especially the article on Chemistry and Natural Theology,[2] and an address on the Resurrection, to medical students.[3]

Along with a copy of the lecture forwarded to Mr. D. Macmillan, is a note saying, "I send a sermon, which, when you have nothing better to do, read. . . . Some bits of it you will read, as I wrote them, with thoughts of ourselves;

[1] "On the Character of God, as inferred from the Study of Human Anatomy."—"Addresses to Medical Students." Edinburgh: A. and C. Black, 1856.

[2] "British Quarterly Review."

[3] "Religio Chemici." Macmillan and Co.

but you will see, that like yourself, I try to be ready either for life or death." To Dr. Cairns, the lecture so painfully brought the impression that he did speak unconsciously of himself in its pages, that he immediately wrote to ask if he felt worse in health. In reply George says, "Your very kind letter took me by surprise. I did not intend, either in the lecture or letter, to give expression to feelings so sad as you have inferred me to be actuated by. The lecture was delivered last February, not to provide an outlet for grief, but to press some matters home to the minds of students of medicine. Read as a whole, I entertain the hope that the lecture will not be found unbecomingly or morbidly sombre and grave.

"As for the letter, it was written on Sabbath, and I therefore avoided lighter matters; it was written also to you, recently sorely tried by a mournful affliction, and therefore it was grave. I do not at all disavow having been myself grave in writing it, for personal reasons, but I cannot allow you to expend an undeserved amount of sympathy on me, who really am not making special complaint.

"If I were to sit in medical judgment on my own case, I should find it quite impossible to pronounce upon my own viability. To be well enough to work is all a man needs to be, and is all I expect. Latterly my working power has certainly been less than before, but it may quite well come back. I can honestly assure you, that regarding my prospect of life as a matter on which God has not given me a decisive or preponderating answer in the negative, and feeling that I do not *deserve* (as a profitable servant) to die, and further despising the moral cowardice of shrinking from work, I am studying and labouring cheerfully as one who may live and must not cumber the ground. . . . In reality, the other world and the shadow of death have been in my

thoughts since I remember. Often formerly as much as now, have they been uppermost. Do not, therefore, think me given over to unusual or unworthy sorrow."

To a fellow-invalid like Daniel Macmillan, he confesses more freely in June to being "very languid, weary, and unfit for work of all kinds. To write even this letter is an effort, and I feel as if to lie down and sleep were the only thing worth doing. I have often been as ill before : but like you, I feel that some time must be the last, and I often faithlessly and selfishly wish it had come.

"If I go out of town this autumn it will be to some place near at hand, where I can be quite at rest, and lounge idly back into vigour again. This long cold spring has put its mark upon me, and I slowly find myself burning nearer to the socket. . . . I have no hope of being in Cambridge this year. I am not well enough to travel willingly, and have no prospect of being compelled to go south, though perhaps I may be."

From Melrose, whither he retired for six weeks in autumn, he writes to his brother Daniel: "The weather has not been propitious, yet I have contrived to spend a great deal of time in the open air, and have profited by it. . . . The last three months, up to the close of July, were spent in almost continual physical uneasiness, rising often to pain ; and that is not pleasant. But as I now am, I should be very, very ungrateful to the Giver of all good gifts, if I made great complaint ; and the future I leave with Him. I enjoy the quiet, and on a Sabbath like this can meditate on that great world beyond the grave—towards which I perceptibly approach nearer and nearer each summer—in a way I cannot do in the whirl of town life."

While at Melrose, he prepared for the press what has been unquestionably the most popular of his writings,

"The Five Gateways of Knowledge."[1] It "was written to help a Sunday School," its first delivery being in Leith, and the substance of the whole being given in one lecture. Some years later, it was offered in a more expanded form in two lectures to the Philosophical Institution, Edinburgh, (in 1853,) and with slight changes and additions, is published as then delivered. The title has been supposed to be borrowed from Bunyan's town of Mansoul, a quotation from it being used as a motto; but this motto was an afterthought, and not a suggestive one previous to writing. A reverence for the body, with its wonderful powers and capabilities, and the noble destiny awaiting those sharing the Christian's resurrection hopes, seems the stand-point from which he gazes at those senses by which the soul and body most freely commune together. The strongly prevailing tendency to undervalue the body he regretted, and probably in this "prose poem," as it is fitly called, he has done much to counteract it. The "Five Gateways" may be taken as one of the best specimens of his popular non-scientific lectures; the pleasure it affords is permanent, and answers to one test of a work of genius, it being equally enjoyed by the young and the old. A cheap edition was speedily called for, and in a second issue there appears a beautiful illustration, by Noel Paton, representing the soul as a child, to whom the senses—female figures—tenderly and lovingly minister. Mr. George Harvey was the medium by which the request for an illustration was conveyed to Mr. Noel Paton, as is shown by this note :—

"Dear Maestro Giorgio,—You were pleased to say that you would visit Noel Paton the Good, with a letter from me about the coveted design from his wonder-working

[1] Macmillan and Co., London and Cambridge.

pencil. Know then, Maestro Eccellentissimo, that enclosed is the letter, and if you will make it part of your Pilgrim's Progress to carry it to Fairy-land, where No Ill abides, and deliver it with speech of your own to him who should receive it, you will render another kindness to your loving

"GIORGIO VOLUSENO."

Of the "Five Gateways," about eight thousand copies have been sold up to this time, besides an unauthorized issue by a house in Philadelphia, of which we have no return. It has been spoken of as "a hymn of the finest utterance and fancy—the white light of science diffracted through the crystalline prism of his mind into the coloured glories of the spectrum; truth dressed in the iridescent hues of the rainbow, and not the less but all the more true." "He tries with that affectionate spirit, that love of the good and the great, that reverential adoration of God's wondrous works, which have made Dr. George Wilson's name a pleasant sound in the ears of all who know him, to make his readers feel with himself an intense appreciation of those blessings in which he revels, who knows how to make his soul and his senses work in a wise harmony." We believe this book to have become one of the great cords of love that knit the writer so closely to the hearts of thousands.

While he says, "My modesty is shocked by sending to so many and so wise men my small rhapsody," he reports the acknowledgments received as "of a threefold character,"—

"1. *Talleyrandish*, *i.e.* have got the book, and expect pleasure from reading it.

"2. *Patronizing;* will put a copy in the School Library.

"3. (*a.*) *Hearty*, such as Dickens, Wilson, Ruskin, Canon Wordsworth, Buxton, Argyll.

"(*b*) The same, but judiciously critical.

"(*c*) The same, but grumphy, and injudiciously critical. . .

"I read them all with interest, most with pleasure, none with pain."

The following letter, written before leaving Melrose, is not offered as a specimen of his official, or even semi-official correspondence; the style is peculiarly his own, and not a few such did good service in securing specimens for the Museum. It is addressed to his friend, Miss Abernethy:—

"*Private and Confidential, not to be shown in Court.*

"DEAR JANET,—I am in a mood so lazy and languid, that it costs me an effort to write even to you, especially when I read in the newspapers such appalling accounts of damages for breach of promise, and remember how many letters you have of mine, and what dreadful damages juries give. If this letter appears stiff and stupid, you will understand why it is so. It is, indeed, a business letter, as you will immediately perceive, and I trust, dear madam (I dare not venture on anything stronger), you will reply to it.

"A message was brought to me that there lay at the shop of *our* grocer here, a pair of wonderful Curling Stones, made of *black* granite (whatever that may he), mounted in silver, beautifully polished, and to be had (cheap) for £3.

"The Director of the Industrial Museum, having money to spend, went to-day to see the wondrous stones; found the granite turned into whinstone, the silver into electro-plate, and the £3 into £3 10*s*. Further, the worthy grocer informed the Director that the stones were sent to him by Mr. W. . . . and that he was not to take a farthing less than the said £3 10*s*. for the stones, which indeed are very beautiful. Now, dear madam (oh, how tempted I feel to

say, dear Janet), I write at the request of the Director, who —though an extraordinary genius, and in truth, the only person in the world who knows aught about a wonderful science called Tech-Knowledgy, is as ignorant of the price of Curling Stones as that of Curling irons or Curl-papers, and understanding from me, that you are very learned about them (not the curl-paper or the curling irons, dear madam, but the curling stones), and that you have a nephew called, if I caught the name aright, Professor Neavn, also very learned concerning the said stones—has requested me to ask your ladyship's, and your ladyship's nephew's advice about purchasing the stones.

"In a word, is it a large, a small, or a medium price to pay? Please to signify by your own esteemed (I would like to say beloved) hand, or that of your respected nephew, what the price of curling stones is, that I may decide, before leaving, about the black granite ones.

"Mother, Jessie, two little parrots sent us from Australia, the Director, the Professor, the gig, the horse, the driver, and *I* are here, and those of Us that are well, are well, and those of us that are not, are not. . . . Your (I was going to say dearly loving) obedient, humble servant,

GEORGE WILSON."

In a Museum letter of the same semidemisemi-official kind, the following passage occurs: "I have just discovered that I have taken two sheets instead of one. Don't make this known to Government, or they'll hang me in a noose of red tape, as a warning to all wasters of public property. I try your ingenuity in endeavouring to show my desire for economy. Read the pages according to the Rule of Three. If that does not succeed, try them upside down; if no sense comes of that, give up the perusal."

Besides making purchases, he had a "begging cap, which," he says, "since I was made Director of this Museum, I have industriously (and industrially) worn." No one was safe from the begging cap, yet no one grumbled at the beggar, but rather encouraged him to continue to wear it, and by its successes to minister to industrial progress and happiness.

On returning to town he reports all as "much the better of the rustication. I certainly feel stronger, and though using all precaution, have been assuring myself of increased strength, by visits to Hat Factories, and Comb-makers' premises."

In the opening lecture for the Session of 1856-7, while defining Technology as "the sum or complement of all the sciences which either are, or may be made, applicable to the industrial labours or utilitarian necessities of man," he dwells on those most closely related to the recurring urgencies of daily labour, and, therefore, of pre-eminent importance. The lecture appeared in the "Edinburgh Philosophical Magazine" for January 1857, with the title "On the Physical Sciences which form the Basis of Technology." It contains beautiful personifications of some of the sciences, while abounding in practical scientific details. Of these pictures we take one: "Geology is half of the heavens, half of the earth. She stands an imperial queen, with her head among the stars, and her tresses are white with the snows of ages; but her feet, graceful and quick, are beneath the young grass, and are wet with the dews of to-day. Her hands are often raised to shade her eyes, as she gazes through space to exchange greetings with each sister-presence in the worlds around. But her fingers are as often busy with homely cares, and with bended forehead she traces for the tenant-lord of her estate the best track for his railway, and channel

for his canal, and shows him where to find coal and iron, and how to dig for gold."

In order to interest all classes in the Industrial Museum, he delivered, in December, by request of the Educational Institute of Scotland, an address "On Technology as a Branch of Education;" and on Christmas Eve, by solicitation of the Committee of the "Art-Manufacture Association," a lecture "On the Relation of Industrial to Ornamental Art." The latter has been published.[1]

At a conversazione of the Royal College of Surgeons, before the close of the year, he delivered the lecture on "Chemical Final Causes," which forms one of the "Edinburgh University Essays for 1856."[2] In it he attempts to add to the ever-accumulating proofs of design by showing, especially, that phosphorus, nitrogen, and iron are the best adapted of the known elements for the purposes they are required to fulfil in animal organisms.[3]

"What we call a final cause," he says, in the concluding pages, "is not God's final cause, but only that small corner of it which we can comprehend in our widest glance. The fragmentary corner fills our intellects, not because it is vast, but because they are small, and we find how small they have made it, the moment we try to make the fragment a measure of infinite wisdom. The wisest of us is but a microscopic shell in the ocean of Omniscience, and when left on the shore with a drop of its waters in our cup, we cannot reflect in its tiny mirror more than a drop's worth of the meaning of the universe. And yet we speak as if out of that drop the whole universe might arise!"

During this Session, as in the following one, he occupied

[1] Edmonston and Douglas. Edinburgh. 1857.
[2] A. and C. Black. Edinburgh. 1857.
[3] See Appendix.

the President's Chair in the Royal Scottish Society of Arts, in the prosperity of which he ever took a lively interest. His addresses on entering office and quitting it, are to be found in the Transactions of the Society.[1] While necessarily containing many references of local interest only, some interesting topics, expanded elsewhere, are touched upon. The good offices of this body were by his efforts enlisted on behalf of the new Museum. The meetings of such societies being in the evening, called for an expenditure of energy unfavourable to his health, yet he deemed it a duty as well as a pleasure to frequent them occasionally. For some years he edited the "Transactions of the Society of Arts;" he was twice elected a member of the Council of the Royal Society of Edinburgh; he was a member of the Council of the Chemical Society, London; a member of the Chemical Committee of the Highland and Agricultural Society, and one of the examiners for the agricultural diploma; an honorary member of the Pharmaceutical Society of Great Britain; and corresponding member of the Medico-Chirurgical Academy, Genoa.

Of the voluntary labours which he failed not to add to those imperative on him, we find mention in a letter to his brother of March 26, 1857,—"Little more than a fortnight will bring my lectures to a close. I begin dyeing on Monday, and we shall dye away till the middle of April 'finishes our course.' I shall be thankful. I like work; it is a family weakness, though I don't pretend to lift your elephant load. But one may have too much: we grieve when we read of your labours. Even the Pagan Hindus put only one world on the elephant's back, and gave him, moreover, a tortoise to stand upon. The tortoise will rebel if you try to carry another world, and infinite space will engulf you.

[1] "Trans. R. S. S. A." vol. v. pp. 1 and 43.

"I don't preach to you. People do to me, and the very next moment ask me to do what they preached against. I am looked upon as good as mad, because on hasty notice I took a defaulting lecturer's place at the Philosophical Institution, and discoursed on polarization of light. You will understand why I did. I was wearying of mere teaching, and wanted to grapple again with a difficult subject, which in 1842 I had studied with some fulness, and at intervals had worked at since, but never so fully as for the sake of my new lectures I wished to do. So I had a wrestle with it, and we finally tried strength against each other in the Music Hall, and though I was not unbruised, nor in all things victor, they gave me by acclamation the crown; mentally I was much the robuster of this struggle, but not physically. To be well enough to work is enough, but to cough half through the wakeful night, and awake to find your handkerchief spotted with blood, is not encouraging. Yet I have got through the winter better than usual, and am still wonderfully well. I have resolutely declined all fresh demands, and am hoping for a little rest." Three weeks later he writes from Bridge of Allan :—"I fled hither a week ago, driven by east wind, cough, and other ailments, and have been leading a dog's life for the last two or three days,—*i.e.* eating, sleeping, and drinking,—much to my betterment."

"*May* 1, 1857.

"My dear Mother,—

"'How doth the little busy bee
Improve each shining hour,
And gather honey all the day,
From every opening flower.'

"Jessie and I seek to make these remarkable lines our motto, but are a little hindered in our laudable object, be-

cause, in the *first* place, we are not bees; *2d*, By having no shining hours, the sun obstinately hiding himself behind clouds; *3dly*, There is no honey to be gathered, because, *4thly*, there are no flowers. At least, however, we resemble the bees in being busy, although I cannot take it upon me to say that we are so 'all the day,' as untruthful Dr. Watts declares the bees to be, in the face of the fact that they are notorious for fighting, stabbing, and singing songs, besides eating, drinking, and sleeping. At all events, between us we despatched fourteen letters yesterday, and here is a pile beside me to-day waiting for replies.

"This is the first of May, with promise of the sun; the snow is melted on the Perthshire hills, and the lambs are reposing on the grass as if they were immortals. . . .

"Don't think me selfish if I stay here to the last. This rest of soul and body is to me welcome beyond description. I hope to fall to work again stoutly on my return."

In July, Government business called him to England. "I hope by the visit," he writes, "to do soul, body, and my dear Museum good." A month later he spent a few days in Manchester viewing the treasures of the Exhibition held there in that year, and then passed on to Dublin to study the arrangements of its Industrial Museum, and also attend the meetings of the British Association. Three bright and happy days were spent in the Manchester Crystal Palace. He was accompanied by his sister and a friend, and while each roamed about at will, according to individual taste, it was their custom to meet at a certain hour at which a daily concert was given. A note written on one of these occasions expresses his delight:—

"*August* 20, 1857.

"MANCHESTER EXHIBITION.

"My dear Mother,—I have just halted for a rest in a quiet corner near the orchestra, which is about to be filled with musicians and play us a tune.

"This is dreamland; fairyland; a bit of heaven upon earth. Angels who once were ministering spirits have here entered into a typical rest, and with their great white wings crystallized into bright marble, look on with sweet and serene faces, and tell us not to despair of rest.

"The spirits of some of the wisest, and gentlest, and best of their kind, are here embodied in iron and bronze, and metal and ivory, and all sorts of workable materials; dead painters, poets, sculptors, artists—dead in one sense, alive in another and better sense—here speak to us in terms the most winning and persuasive. Again and again do I wish they were living, that I might thank them and bless them. Perhaps if they were living I would rather dispute with them than believe them, but here they have it all their own way. And their way is the best here, for they cannot reply if you refuse their lesson, and you lose the good of it if you carp as to its meaning. And so I gaze, and gaze, and gaze, and often find the tears in my eyes, and often smile with delight, and altogether forget the clogging weight of this evil-good body, through whose dim but not dark windows we are compelled to look.

"Jessie will send you our news, which are simply none. —Your loving son, George."

The visit to Dublin was made more enjoyable by the presence of his friends, Dr. and Mrs. J. H. Gladstone, and Professor Voelcker of London, "a happy family" being

formed by their means, so that he says, looking back on it, "my memories of Ireland are very pleasant." A merrier party than they were could scarcely have been found, while business was by no means forgotten. Dr. Wilson read to the Natural History Section a paper "On the electric fishes as the earliest electric machines employed by mankind," which was more fully written out for the "Edinburgh Philosophical Magazine;"[1] and to the Chemical Section a paper "On the processes for detection of Fluorine."[2]

After his return Dr. Gladstone received the following account of his employments:—

"My Dear John,—

"'Thirty days hath September,
April, June, and November,'

and on the last day of the first, A.D. 1857, I proceed to answer your most welcome letter of yesterday.

"I am only getting into working order again. It takes me some time to settle down after such a whirl as I was in. I have not exactly been idle, but certainly I have not contrived to do much. I am rather digesting plans than carrying them out. A President's Address; a Syllabus; three Special Lectures on Paper, Pens, and Ink; one on Industrial Museums; and a course of prelections on Technology, are at present simmering together in my head, like the diversified contents of Meg Merrilee's gipsy camp-kettle. To-morrow, when the new month comes in, I'll begin ladling them off into separate pots and pans, and fall to the process of cooking properly so called. Meanwhile I am chiefly occupied with Forbes's Life and

[1] "Edin. New Phil. Mag." October 1857.
[2] "Brit. Assoc. Reports" for 1857, p. 61.

Directorial Correspondence. . . . I subjoin two conundrums for May's benefit. They made themselves in my brain the other day, and as their study is fitted to invigorate the intellect, and act on it as a powerful tonic, I recommend them to her meditation. The answers I enclose in a folded paper.

1. In what country are all the people's arms, legs?
2. What fish are most active when the water is frozen?

". . . It is at my pen's point to write about India, but I forbear. We shall exchange thoughts on that solemn subject again. Meanwhile, let me say that my sympathies are not least with the humane Englishmen who are compelled to be God's battle-axes on the guilty. Were I in India, I should be hanging and shooting like the rest of them."

The travelling that autumn had been contemplated with considerable trepidation; and thankfulness at no apparent bad results from it was great. A return, however, of that trial which had so often come upon him, namely, illness as the winter session approached, was sent, so that he writes to Mrs. J. H. Gladstone, on October 22d, "I have been confined to the house for the last ten days with a sharpish inflammatory attack, demanding leeches, and other medical delectations. I told you that the doctors had discovered a new malady in my distempered body, a swelling in the side, which I knew too well was likely to be used as a pincushion to stick thorns into by Satan. And so it was, but thanks to the leeches, and the medicines, and the doctor, and the good nursing, and above all, to the mercies of God, I am back to my desk, warned in time to be very wary this winter.

"I ought to be very thankful that the attack did not occur

at Dublin, or on the journey to and fro. I knew the risk I ran, but the consciousness of duty, and the forgetfulness of that risk which I made a point of fostering, lest hypochondriasis should get the upper hand, set me at ease, and would again in similar circumstances. Break the news gently to A., and if she takes it too much to heart, remind her that I subscribe to the Widows' Fund." A. was one of his little wives, then about three years of age.

To another friend he speaks of the great risk of fatal hemorrhage from sea-sickness, as a source of anxiety to him while travelling; while he adds, "I am very glad that I was compelled to travel, and I will go anywhere *on duty*, but mere travelling is to me a burdensome effort. My cup is full of blessings, and the tonic bitter-sweet infused into it is all needed to temper the pleasant draught."

Amidst the varieties simmering in his brain, we have remarked a lecture on Industrial Museums. It was undertaken by request of the Merchant Company of Edinburgh, and delivered to its members and a large circle of guests in December; the special subject being, "The Industrial Museum of Scotland in its relation to Commercial Enterprise." Through the liberality of Mr. James Richardson, Master of the Company, it was printed and distributed widely throughout the country, and was the means of securing valuable specimens. The birth of the Museum he attributes to a conviction, slowly reached, and lying deep in the hearts of men, that industrial museums were a want of the age. The idea embodied in it he represents as fourfold, including the conception of—1. An ample Exhibitional Gallery; 2. Laboratory and Workshop; 3. A Library; and 4. Systematic Lectures.[1] In regard to the

[1] Arrangements on a different footing have been made since Dr. Wilson's death regarding the Museum; and the Chair of Technology,

Museum, he urges the duties which Merchant Companies have to discharge, and its claims on their interest, protection, and encouragement. Most heartily did the Edinburgh Merchant Company respond to the appeal, lending influential aid to the success of the Museum, and giving ready co-operation to the schemes of "their own professor," as they were wont to call Dr. Wilson. The delay in erecting the promised buildings for the Museum—a session of Parliament having passed without a vote of money for this purpose—was an intense disappointment, not only to the Director himself, but to many public bodies, whose interest he had secured, and from which memorials and deputations had been sent. The site originally purchased was too small for the necessary buildings, and much harassing delay took place before even a promise of more ground could be obtained. "No amount of business-writing," he says to his brother, "seems to do otherwise than multiply letters, and the endless labour I have had to go through in reference to a better site for the Industrial Museum, makes me sorry for myself. If Argyle Square be purchased by Government, and a noble building erected there, whisper into your grandchildren's ears, after I have become historical, that Uncle George had a hand in that." To his young nieces in Canada, Uncle George was an occasional

founded originally at the suggestion of the Professors of the Edinburgh University, and so warmly welcomed by the public, has been suppressed, the link closely uniting Commerce and Manufactures to Science thus being broken. "We require perpetually to transfer knowledge from the wise to the unwise; from the more wise to the less wise; and such a chair as this, with its associated Museum, is what, in commercial language, would be called an *entrepôt*, or exchange for effecting such transfers."—("What is Technology?" Inaugural Lecture for 1855-56, p. 15.) It is evident no want of success attended this Chair, though unendowed.

correspondent. A note to one of them, dated March 23d, contains the following inquiries after truth :—"I am lying in bed, with a beautiful warm blister on one side, to keep the cold out, so that I can't venture upon a big sheet of paper. . . . The weather here has been very inclement, and the fields, whilst I write, are white with snow. Two months of such weather are more than we are accustomed to, and you may judge how little it suits us, when I mention that I have only once been in the garden for the last three months, so cold has it been. Who is Mr., or is it Mrs., or Miss Zero, who is always getting up or down in the cold weather? Is Zero black or white, lady or gentleman, young or old? I am told that Zero is a mad milliner, who insists on dressing everybody in white, and painting their noses blue. Is that true? Why is she always letting somebody get above her, or putting somebody below her? Is she a school-girl, and a dux or booby? Is she at school with you? Tell me all about her? They say she has something to do with the freezing point. What's it? Is it the point of the nose, or the end of the fingers, or the tip of the ear? Write me about these curious things. . . . Vivo is at present in deep mourning, having lost, by death, Lady Fanny Squirrel, to whom he has long been engaged to be married. Poor fellow, he has waited long, and we hoped it was to have ended otherwise. He talks wildly at times about life being a burden to him, but I don't perceive that his appetite has suffered; and if any other dog sets up chat to him, he draws his sword, and is at him at once. He announces his intention of erecting a monument to the memory of his peerless Fanny, and then he will join the army, and spend the rest of his life fighting against the Turks, *i.e.* the Cats."

The lectures in the Philosophical Institution, already

alluded to, were four in number, their subject being the "Graphic Industrial Arts." One of them has become familiar to the public under the title, "Paper, Pen, and Ink."[1] Looking back at the session when past, he says, "For the last two months I have been existing rather than living. Sleepless nights; aching limbs; the whole day a chronic *malaise;* and the smallest work an effort. My only painless moments were when lecturing. Then I forgot all, as also, of course, when asleep; but though assuredly I did sleep at times, I never had the feeling of rest, and hour after hour on to three or four in the morning, I wearily rolled about, listening to ancient Job saying, 'When I say my bed will comfort me, then thou scarest me with terrors.' . . . The change of Government compelled me to get up a new set of petitions for the Museum, and I had three troublesome law cases to work at, and a sketch of Edward Forbes's Life to write for the Royal Society of Edinburgh. It is a chapter of the book at which I am now working, and proposing to work at till it is finished. I find it, however, so painful a task, that again and again I put it aside. Now I can look more calmly at the mournful history, and I have much profitable reading for it in botany, geology, and physical geography. . . .

"Time in these telegraph days keeps up with the quickest of electrical flashes. Did I not awake one morning in February, and find myself forty? It is a desperate age for all the good one has done, and I say to myself, 'Had I known I should have lived so long, I would have done a great deal more.' And yet, would I? Perhaps much less, little as it is. . . . I finished, a week ago, my third course on Technology. I have changed the subject each year, and have now completed (?) the round of vegetable,

[1] "Macmillan's Magazine," November 1859.

mineral, and animal industrialism, and know my ground. There are fearful gaps to fill up, and a thousand things to learn, but I have had some of the same men all the three years, and have interested even soap-makers in soap-making. But all this is shockingly egotistical. The meaning is, that we have a vocation, and will do our best in it. . . . Have we not all of us a thousand reasons for thanking God that He has been so merciful to us, and that He has given us so much occasion for gratefulness? . . . We are in the hands of God, and know that our Redeemer liveth, and that our life is hid with Christ in God. I have been thinking a great deal about these things lately, and with many reproaches, striving to live nearer the Unseen."

CHAPTER XI.

THE STRUGGLE CLOSES: VICTORY WON.

"Translated into the Kingdom of His dear Son."

"So much as moments are exceeded by eternity, and the sighing of a man by the joys of an angel, and a salutary frown by the light of God's countenance, a few groans, by the infinite and eternal hallelujahs; so much are the sorrows of the godly to be undervalued in respect of what is deposited for them in the treasures of eternity."

"*April* 26, 1858.

"My dear Jeanie,—If you wish to see a lazy man, take Pussy, mesmerize her, and make her clairvoyante, desire her (in spirit) to go to the railway station, take a ticket, enter a first-class carriage, and go on, on, on, till she comes to the Bridge of Allan.

"Tell her to get out there, taking care not to leave her parasol or smelling-bottle behind her, enter the omnibus, and request to be set down at Sunnylaw House. When she is there, she will mysteriously tell you that an awful black dog, called Betty (in reality, a very mild canine lady) guards the gate, whilst a connexion of her own, stout and comfortable, basks in the sun, as respectable cat-matrons of her years love to do. She will further describe to you a room with one oriel window, looking south on the bed of a fishing stream and a line of railway, which occupy different heights in a valley rising into a fine sky-line crowded

with trees, behind which we see the sun set, and the stars rise.

"Further, after describing a faymale, something like yourself in look, Pussy will signify that there is a spectacled member of the other sex, lounging in an easy chair, making pretence of studying and working. His name, Pussy will spell for you, if you give her letters of the alphabet, taking care, of course, that she is in the mesmeric rapture, and putting down the whole alphabet before her on the floor. She will then hunt among the letters till she finds one, snatch it up like a mouse, and deposit it in a corner, then another hunt, and another deposit, and so on, till the whole word is made thus: D— O— S— I— E—, which being interpreted reads *Dosie*, a name given to me by, we won't say whom, because I am always in a doze. You will then unmesmerize Pussy, and give her a bowl of cream.—Your loving GEORGE."

Such are the directions given to a sister to discover the spring retreat. Notes to his mother speak of the house as "delightfully situated, looking out over a wide stretch of hill and valley, with something higher than hills on the horizon, a stream in the lowest valley-bed, and fields between, occupied at present by matron sheep with lambs, some black, some white. One patient mother has, by maternal right or adoption, both a black and a white lamb, and I interpret her language towards the thirsty and impatient couple to be

'Drink fair,
My piebald pair.'

"I wonder if an American ewe has ever one twin black and the other white? I reckon not. The greatest nation in creation would be endangered by such an event. Poor

Blackie would be quickly doomed to Lynch law. . . . Before I left Edinburgh, a friend told me that his late grandmother, when nearly ninety, speaking of heaven, said, 'It was nae for the like of Jenny Brown and her to expect to get far ben; but may be they would get seats on the hinmost[1] benks near the door.' Good old body, I hope she is far ben by this time."

"*Tuesday.*

"As I have not the porcelain tablet[2] beside me, I pick up this scrap of paper instead thereof to write a line upon. I think I begin to mend. Yesterday was a delightful day. My limbs ache less. I sleep better, and feel less languid. The great quietness and serenity of this place calm and soothe me, and the almost entire rest to which I surrender myself, is slowing my pulse, and clearing my brains perceptibly. We have what I have long wished for, a western window with a wide prospect. Lambs and crows, and the sound of running water, the steam-engine whistle, and the lowing of distant cattle, prevent utter solitude. The sky is ever changing, and in the evening a crescent moon and the evening star play at hide-and-seek among the clouds."

From this pleasant life, with "the absence of business-worry, the easy morning's literary work, the long profitable readings and meditations, and the soothing influence of green fields, and blue or sunny skies," he was speedily roused, and cast into the whirlpool of this world's cares. Intelligence reached him while at Bridge of Allan of the death of Dr. Gregory, Professor of Chemistry in the Edin-

[1] Farthest back seats.

[2] Conversation with his mother was often carried on by means of the tablet alluded to. It is now preserved, with the last words he wrote on it, no one being permitted to use it after him.

burgh University. He mourned the loss of one so amiable and so accomplished, but did not consider his own prospects affected by it. So passed a day or two, in unconsciousness of the stir on his behalf in town, from which, at last, came a kind friend urgently to insist on his appearing as a candidate for the Chair. The result we shall give as much as possible in his own words.

"*May* 7.

"My dear Daniel,—The enclosed [a letter to the patrons as candidate] will startle you as much as it does myself. I left Edinburgh three weeks ago, anticipating nothing but a long rest. In my absence Dr. Gregory died very unexpectedly. He had long been poorly, and had scarcely lectured this winter, but no one thought him near death. I had no thought of trying for this Chair, but without waiting for my consent, such a troop of friends, including Councillors, have taken up my case that, *nolens volens*, I am in the field. I look at the matter very composedly. For purely personal reasons, I should rather remain as I am; for others I could change. I shall cheerfully abide the issue. The suspense is very, very unwelcome, but must be borne. As yet I scarcely feel that I am a candidate."

"*May* 14.

"Many thanks for your[1] good wishes in reference to the Chemistry Chair. A perfect phalanx of friends has gathered around me, and shown me an amount of kindness enough to make proud, and at the same time humble, any man. But as yet I can say nothing of prospects. Meanwhile, don't stop collecting for the Museum. We must make it and keep it famous, whatever happens."

[1] Mr. Godfrey Wedgwood.

Such suspense was not helpful to physical wellbeing. "I cannot write at length," he says, "for I have an open blister on my right arm, and every now and then it makes my nerves quiver as if my elbow were laid on a Ruhmkoff's coil. This does not conduce to legible writing or elegant composition."

On May 20th, he encloses to his brother a letter of withdrawal, saying, "The enclosed will let you know that I have retired from the Chemistry Chair. I need not tell you that to do this has cost a sore effort. I was sure of the Chair. A large majority of the Council had declared for me. . . . The kindness, respect, and admiration unsolicitedly expressed towards me by people I never saw, have unspeakably touched and humbled me.

"The Chair, you know, was the object of my youthful ambition. A position of honour and influence is afforded by it such as few positions give. Why then refuse it? Simply because it would have been a fatal promotion. I could not have faced the physical labour. So convinced was I of this that I had no purpose of standing. . . . I accept the issue without repining. We have both been taught in different ways that 'man proposes, but God disposes.' When He took away my health, He taught me to lay aside as unrealizable my ambition; and two years ago I fully resigned myself to see the Chemistry Chair go past me. I should be the most thankless of men if I made light of what is left me, or disallowed the comforts and honours of my present appointment. The one point which more than any other weighed with me was the possibility of my allowing a valetudinarian pusillanimity to keep me from hazarding new duties.

. . . . . .

"So farewell the dream that I should fill the Chair of

Black, though I should have taken my chance as a public chemical prelector against any of my contemporaries, and not been afraid though the *eidolon* of Black himself had attended *without a ticket*."

This letter is written apparently with effort, the writing being unsteady. The next to Daniel, of June 4, gives evidence of improvement in the "*write* arm," as he calls it, in its clear, firm characters :—

"Many thanks for your kind letter. By this time you will have learned the issue of the Chemistry Chair election so far as I am concerned. I need not repeat that to withdraw was a sore trial, which is not lessened by finding on every side assurances from Councillors that I should have been unanimously elected. Nevertheless, I do not doubt that I did right. My intellectual vigour is, I think, what it was. My moral faculties are, I trust, disciplined for the better; but my body is frailer, especially lungwards. Even in unusually balmy, genial weather like this, I find walking or climbing infallibly bring on difficulty of breathing and frequently spitting of blood; and in winter, when the weather is otherwise, I scarcely walk at all. In these circumstances, I could contemplate with no prospect of success the cares of the Chemical Chair. I gave way last winter in February, and, till a week ago, have not known what painless existence is for an hour at a time. I can endure this with some (though far too little) patience, but it leaves no surplus for the energetic work of an important Chair. I therefore resign with a composed air, hiding any disappointment I may feel. They are in the thick of the canvass, and I am whirled into it, visiting Councillors. It is work I exceedingly dislike, and it is not made more

likeable by Councillors on all sides telling me that I might have saved them all this trouble by not withdrawing. However, one does for a friend what one would not do for one's-self."

His tone in writing to friends is almost apologetic, so urgent were they that he should stand. The zeal of one Councillor amused him not a little, who replied to an objection on the score of health, "I would give him the Chair though I knew he should die the week after." To Dr. Cairns, whose counsel and sympathy had been precious in those weeks of anxiety, he writes :—

"I left the matter in the hands of God, and my prayer for light has been answered. I am quite satisfied that I have arrived at the wisest conclusion, and am very thankful to be rid of suspense and serenely at work again. . . . It costs an effort to give up an honourable office for which one's life had been a training, and which came within reach in so honourable a way. But I do not repine in the least. On the other hand, I am very grateful for the unlooked-for kindness and respect shown me, and bend my knees in thankfulness to God for His abounding mercies."

During what remained of his life, he became ever more satisfied as to the decision then made, and an increase of his salary, as Director of the Industrial Museum, was expressive, so far, of a consciousness of his value. This was his last struggle with worldly ambition, and out of it he came so visibly purified, that his growing gentleness and patience were subjects of remark amongst those who most dearly loved him.

The summer session was wound up by an address given at a conversazione of the College of Physicians, Edinburgh. A few days at St. Andrews followed, when, at the request of

his host, Dr. Day, he sat to Mr. Rodgers for the calotype from which the portrait attached to this volume is engraved. The month of August and part of September were spent in a small farm house, near Innerleithen. The only dwelling visible from it is a deserted house at a considerable distance. The Tweed passes before it, and "the little hills rejoice on every side." To be thus alone with nature was a solace to the weary worker, craving for rest. "We have been here," he tells his brother, "for more than a month, beside the rippling Tweed and the quiet hills, singularly well off in some respects; nevertheless, I have not felt moved to write to you, being too tired after a summer's engrossing work to feel a pen a welcome instrument, and compelled notwithstanding to keep it going for some hours each day. A holiday without any heavy writing is one of the delights I look forward to. Lots of continuous reading in the open air, with many musings over what is read; perhaps a verse or two spun, but the brain upon the whole lying fallow, or getting only a mild top-dressing of intellectual guano, is my lazy notion of a rustical month of holidays. I would have written to you if I had had anything to write, but I had nothing in the way of business, and the reflection on paper of my monotonous life here would give no amusement. I had a faint purpose of going to Leeds to the British Association meeting, which comes off ten days hence, but I don't feel strong enough for the excitement, and won't go. I paid for my Dublin journey last autumn with a sharp attack of splenitis, which pulled me down all the winter; and my weary lungs bleed on the least provocation. It makes me smile grimly to find that I must avoid a volume of 'Punch,' as he makes me laugh at a rate of which my wind organ by no means approves. Here I am resting these troublesome bellows, so as to make

them serviceable for winter's work." A volume of 'Punch' was a frequent addition to the books selected for country reading. On one occasion a large parcel, brought to the railway station when starting, was found to consist of four volumes of that periodical. A niece, about five or six years old, shared the pleasure of this study one autumn. Each day after dinner were the illustrations admired by the two together, clear ringing laughter testifying to the appreciation of them, till at last the child declared as her settled conviction, "Oh! Uncle George, I think 'Punch' is the most delightful book in the world!" and that Uncle George was of the same mind she could not doubt.

While at Innerleithen the comet of 1858 began to show itself distinctly to the naked eye, and was often watched from the cottage door as it appeared above a hill directly opposite. At first George's mother had difficulty in distinguishing it, but one night she announced having seen it. "Did you see it wag its tail?" asked he, gravely, as if no other evidence could be received. "Ah! George," was the reply, "the waggery is all in you."

The Memoir of Edward Forbes made some progress this season, but the associations it recalled made it very trying work. "The reading of Ed. Forbes's papers," he says, "continually brings before me the fate of my fellow-students, and often saddens me beyond endurance. I would lose heart and hope myself but for the hope of an endless and blessed life beyond the grave; yet is not the life of Christ enough to show us that on this earth sorrow and suffering are the appointed rule for most (I do not say for all), and may we not suffer with Him that we may rise in glory with Him also? May the blessed Saviour lead us in His own bleeding footsteps to the rest that remaineth for the children of God!"

To Dr. Cairns he writes, after returning to town :— "Greatly did I desire to see you, greatly wish to have a long, long talk about heaven and earth, the world that is, and the world that is to be. . . . Come to see us as soon as you can, and give me the benefit of a long Christian gossip with you. The way of life grows, blessed be God, clearer and clearer to me, and I know Christ better and better, though there is much darkness and despondency still, and weak faith, and downright sin. But I am thankful for much light and peace, and hope for more."

The introductory lecture on Technology for 1858-9 has been published, under the title 'The Progress of the Telegraph.'[1] Under what circumstances the session was opened, a letter to his brother Daniel, of date November 25, explains :—

"Lest to-morrow should prove, like all recent Fridays for a long time back, a letterless day, I take a sheet of paper into bed with me and begin an epistle. . . . In spite, as seemed, of all needful rustication, I was threatened on the very eve of beginning this winter's course with erysipelas in the legs, and had to spend the day before opening in bed. I was induced to think that I might require to borrow the deceased Peggy Brown's lapidary inscription, with the due change of gender :—

> 'She had two bad legs and a baddish cough,
> But the legs it was that carried her off.'

The legs got better, but by way of mending the cough, I contrived, forgetting as I always do that I am a damaged locomotive, to fall upon the corner of a thick board, and hit my side such a thump that I thought I had broken a rib. However, it was not fractured, though it has ached and

[1] Macmillan & Co. 1859.

bothered me sufficiently to stop all extra work, including hospitalities and letters. The said cornered board had on it one of the plans for the New Industrial Museum, about which I was much concerned.

. . . . .

"Students abound this winter, especially juniors. I think myself well off with thirty-five. My class is a very pleasant one. An Indian general, an artillery lieutenant, who lost a bit of his skull (but certainly none of his brains) at Lucknow, an engineer officer, four Indian surgeons, a navy surgeon, a W.S., several young ministers, and a wind up of farmers, tanners, &c. They are a pleasant lot to lecture to, and I have re-arranged my laboratory for them, where we meet comfortably. Only a little better health and—but why complain?

. . . . .

"Forgive the valetudinarian haziness of this. We are well."

The tendency to erysipelas, of which this letter speaks, continued more or less from that time onwards, and compelled him to even more seclusion than hitherto. Previously it had been his custom to write or read for some hours almost every evening to the sound of the pianoforte, or, as he called it, his "private band." Favourite songs, and morsels of Beethoven, Mendelssohn, or Handel, were encored *ad infinitum*, with an occasional Nigger melody or simple air. A whistling accompaniment betokened the special favourites, work of the lighter kind going on all the while. His love for music has already been spoken of. "Music! music! Some time or other, if not in this world, at least in the next, I will drink my full of it." After hearing Jenny Lind sing, he says: "I was greatly delighted and comforted. Music is an amazing thing even upon this earth; what must it be in heaven?"

But now these pleasures had to be foregone, and the evening spent in bed, where, surrounded by books and writing materials, he carried on his literary work for five or six hours consecutively. Special calls were attended to as before, but all available time was spent in a recumbent posture, with application of lotions. At the close of December he tells his brother: "I have no news to send you of a stirring sort. The winter hitherto has been more than ordinarily monotonous: much of it spent in bed, and much of it in doing work with an effort. This morning I am somewhat seedy, in consequence of an hour and three-quarters' lecture last night at Leith.

"I was induced to give it to help the funds of a Free Church, presided over by one of those pre-eminently good and lovable men, to whom less good and lovable people cannot say No, and who should be taken periodically before a magistrate and cautioned against asking favours from their brethren. Returning from this lecture I speculated, as I suppose you do on such occasions, as to the good such prelections do. In this case I had the comfort of knowing that I had helped to raise 50*l.* for the cause—a consolation seldom to be had. The ordinary result I take to be such as was experienced by a young minister lecturing on astronomy in the south country to an audience of shepherds, etc. He had dilated pretty largely on the immense distances which separate the heavenly bodies from each other; and when his lecture was over, a friend heard two of the shepherds discussing its merits:—'Jock! d'ye believe a' the minister said?' To which Jock replies (*more Scottico*), 'Div ye?' and Tam emphatically answers, 'No ae word!'

. . . . . .

"I am going off to Bridge of Allan for three or four days next week, in hope that it will set me up a bit, and enable

me to work with less sense of oppressive dulness than has been the case hitherto."

"BRIDGE OF ALLAN, *December* 29, 1858.

"MY DEAR MOTHER,—'How did Tubal-Cain first learn to work iron?' I was about to have that momentous question answered when the train reached this, and had to hurry out without receiving a reply. The chance of having the problem stated above made clear is not likely to occur again. I may, I think, make up my mind that I won't, however long I live, find any one in a condition to tell me how Smith the first learned to hammer iron. Yet my neighbour in the railway carriage, whom Uncle could not fail to recognise as having something antediluvian about him, seemed to know all about the matter. We had been talking about iron-manufacture, when suddenly referring to a supposed improvement which a very ignorant person had, as he imagined, 'introduced' into iron-making, not aware that the practice was immemorially ancient, my fellow-traveller said to me, 'Why, Tubal-Cain found that out *the second day*.'

"Well, thought I to myself, if you know what T. C. did the second day, perhaps you can tell me what he did the first; and so I put the question which begins this note. I lost the answer, but I don't think, though I had gone on to Aberdeen with my good friend, I would have got more than an oracular response. He could answer other questions, however, and is largely to help the Museum, for which I begged all the way.

"We are in quiet comfortable lodgings. I am steadily progressing with my lectures. To-day is magnificently bright, and we shall presently visit Dunblane.

"Your loving son, GEORGE."

On the first Sunday of 1859, he tells Dr. Gladstone :—

"I found your kind and welcome letter awaiting me here on my return from Bridge of Allan, where Jessie and I had four very quiet and pleasant days. I have not felt up to the mark at all this winter. . . . My worst complaint is a readily-recurring hæmorrhage from the lungs, which, though passive rather than active, none the less steals the life-blood away, and is the cause, I suppose, of the sense of weariness, good-for-nothingness, slough-of-despondness, as May, I imagine, would call it, which has lain heavily upon me. I ran away to the Bridge of Allan to mend this, carrying with me Jessie, a Bible, the Life of Milton, the Life of Douglas Jerrold, Miss Adelaide Procter's Lyrics, four or five volumes on Chemistry, and paper, pens, and ink. I studied some six hours, meditating and simmering over the metals on which I am to give four special lectures, and wishing a dozen times that you and other chemical friends were within call. I read Jerrold, a bit of Milton, and lots of Miss Procter, wrote out nearly a whole lecture, moralized and chatted with Jessie, visited the magnificent neighbourhood, dined early, went to bed early, and came back decidedly the better of my journey.

"I have done little this winter. You will receive one of these days a new edition of the Electric Telegraph, also a Lecture on it. I raised a little money for a school by a lecture on balloons, and helped at a very pleasant meeting to raise money for the Special Indian Missionary Fund, and took a hearty part at another assemblage intended to establish a Medical Missionary Dispensary, where the young men will be trained as medical practitioners and evangelists at the same time. It is a step in the right direction, and I hope will prosper.

"When I heard of your lighthouse appointment, I said they have selected John Gladstone not to look after the lights, as I daresay he imagines, but to look after the b(u)oys, whom he has done so much for at the Bloomsbury Branch. Here I will not touch upon secularities. About coloured lights, etc., I will trouble you with a week-day letter, containing some chemico-physical speculations. This is a Sabbatic one.

"I rejoice to hear of your success with the young men. God bless you in your work! It is worth all other work, and far beyond all Greek and Roman fame, all literary or scientific triumphs. And yet it is quite compatible with both. Douglas Jerrold's life is most sad to read. In many respects it gave me a far higher estimate of him morally than I had had before. Indeed, I did not pretend to know nor to judge him, but I fancied him to have been a less lovable, domestic person than he was. But what a pagan look-out! What an ethnic view of this world and the next! He might as well have been born in the days of Socrates or Seneca as in these days, for any good Christ's coming apparently did him. There is something unspeakably sad in his life, and it was better than that of many a *littérateur*. The ferocity of attack on cant and hypocrisy; the *girding* at religion, which they cannot leave alone; above all, the dreary, meagre, cheerless, formal faith, and the dim and doubtful prospect for the future, are features in that littérateur-life most saddening and disheartening.

"And the men of science, are they better? God forbid I should slander my brethren in study, men above me in intellect, capacity, and accomplishment. I delight to know that so many of them are Christ's willing followers and beloved servants. But recently I have come across four of the younger chemists, excellent fellows, of admirable

promise and no small performance. I was compelled to enter into some religious conversation (not discussion) with them, and found them creedless. I don't mean without written or church creed, but having constructed no 'I believe' for themselves. Standing in that maddest of all attitudes, viz., with finger pointed to this religious body, and that religious body, expatiating upon their faults, as if at the day of judgment it would avail them anything that the Baptists were bigoted and the Quakers self-righteous!

"These scientific brethren of ours watch us, no doubt, not in an unkind, but still in a critical and unconsciously analytical spirit, and see the motes in our eyes as the spots in the sun. And are they not entitled to count these spots? and can we blame them for judging us as lights, which we ought to be, and demand that the light that is in us be not darkness?

"Oh to tell them kindly and wisely not to try themselves by us, who are but dim and tarnished reflectors of the Divine brightness, staining and colouring the few rays we do retain, instead of sending them back pure and white as they fell upon us, but to look to Him who is light, and in whom is no darkness at all; and when they find that they cannot look on that awful splendour and live, to turn to Him who is the brightness of His Father's glory, yet so veiled in sinless flesh that all live the better by looking to Him, and none indeed truly live otherwise than through and by Him who is the light of life.

"I see I have been rhapsodizing, but I don't often do so. I hope one of these days for an opportunity of addressing the devotional meeting of our Edinburgh University students. If so, I shall try to urge the scientific class to believe in Christ as the Head of the Schools of Science

as much as of the Church called by His name, and to ask the *littérateurs* what the tongues of men and of angels will do for them if faith, hope, and charity, are not in their hearts, and the greatest amongst the three—charity.

"Send me the Recreation Essay. As a nation we are, I suppose, the worst in the world at keeping holiday. We take our pleasure sadly, and the sadly changes wofully fast into sinfully.

"The Total Abstinence Society here wanted me to speak at a great Centenary Burns meeting, but I was glad that I had a previous engagement. I wish the abstainers all success, but their merits and those of Burns belong to very different categories. I could not praise them together, and to make a memorial celebration of Burns an occasion for pointing morals from his sins, is, I think, a duty not asked by God or man at our hands. I refer to this as an unfortunate endeavour to turn a holiday into a fast-day. Let holidays be holidays. I count on a copy of your paper.

"The best of good wishes to May, and love the fondest, best, and truest to A., till Valentine's Day come. Secularities another time. I will allow my letter-conscience a small siesta. Jessie sends a Christmas-box full of love."

To Dr. Cairns he speaks of the time spent at Bridge of Allan as "four delightful days of rest and recruitment of body and soul, including, or rather included in, 'rest in the Lord."' Since returning, I have been greatly better, and I am now workably well. A load of labour has saved you the infliction of a letter hitherto. . . . I was at a very delightful devotional meeting of medical students in the University on Friday night. They asked me to preside, and after in vain trying to write a suitable address, I

resolved, in God's strength, to speak from my heart to theirs, in the name of Christ, and it pleased the blessed Spirit to give me some utterance for them. I am to preside next week at a very different meeting, viz., one of the Burns Centenary meetings. I was asked to take part in two, which I declined. I agreed to become a steward at the Music Hall, as the quietest way of escaping; but a week ago the Trades' Delegates came to me as Industrial Professor, to take the chair at their meeting in Queen Street Hall, and I agreed, provided the Music Hall people would let me off. This they reluctantly did. I shall be criticised and condemned by certain religious people for this step, but my conscience approves it. The duty has come in a fourfold way to me. I think it is quite possible to commemorate the birthday of Burns without being guilty of idolatry, or partaking in his sins. I think, moreover, that I may give the meeting a bias in a direction no Christian will lament, and which another might not do. I have made it matter of solemn consideration, and I hope your prayers for me will not be wanting." Of this meeting he says to his brother, "I believe I may honestly say that, as a continuous success, it was the best meeting in Edinburgh. The only shadow of mishap was occasioned by an ill-timed allusion. . . . Otherwise a more decorous, cheerful, hearty meeting, I never was at, and the old man Glover (a gaugêr, and now a centenarian), who appeared at it, was a wonder himself. The scene between him and me—for to me he addressed all his remarks—was described by those who were onlookers as amusing in the highest degree. He asked me, among other things, if I 'kent what a clachan was;' and after dating some event by the year of the great storm, suggested interrogatively, 'But that wad be afore your time?' I asked the year: '1795!' The quiet manner

with which he told of his supplanting thievish carriers who tapped the rum puncheons between Edinburgh and Dumfries, and how 'nae bung started wi' him,' was great, especially when he added, '*but I had a gimlet!*' . . . I write this in bed, far on in the night. Here we are all well."

Of the students' devotional meeting spoken of in a previous letter, a record remains in a few notes, apparently written in haste, and of which only the closing head can be clearly made out. It is as follows, and is suggestive enough: "V. This Blessed and Adorable Saviour, the Elder Brother, the Master, the Redeemer, the Life-Giver, the Judge, the Atoner, the Creator, the Teacher." It was words like these that led Dr. Alexander to say, "I have often felt as if there was something sublime in this man, with his fragile frame and modest attitude, standing amongst the aristocracy of science, or before some popular assembly, or in the presence of his students, and calmly, unostentatiously, with the simplicity of a child and the unfaltering confidence of a confessor, giving utterance to the sentiments of faith and worship that came, as from his inner soul, spontaneously from his lips."[1] The grace with which illustrations from Scripture were introduced into his public addresses was peculiarly his own, and the reverential love with which all was evidently laid at the feet of the Saviour had something triumphant and joyous in it, elevating for the time the most thoughtless of his audience. He had the power, so rare even among earnest Christians, of consecrating to God every act of business, thus offering the devotion of a worshipper as truly in his laboratory and lecture-room as in the sanctuary. To those who were privileged to join in prayer with him, this was most appa-

[1] Funeral Sermon, by Dr. W. L. Alexander, p. 28. A. and C. Black, Edin. 1859.

rent. In the morning there was the petition for help, support, guidance, and in the evening the calm offering up of all the acts of the day, to be purified and accepted for the sake of the great Mediator. Few mannerisms marked his prayers, but two desires often found expression, "that in all things Christ might have the pre-eminence," and that "having begun in Christ, we may end in none else." Jesus was the "Alpha and Omega" to him, and therefore did his light shine clearly before his fellow-men.

Reference has been made to preparation of lectures during the Christmas week. They were the last he delivered before the Philosophical Institution, four in number, "On the Metals in their Industrial Relations." This was the eighth course of lectures addressed to the audiences of this Association, and it might have been imagined they had had enough of him. Men of the highest eminence were on their staff of lecturers, and many from a distance to whom novelty lent a new charm; yet so far from becoming weary of George Wilson during the fourteen years that he appeared before them, they seemed to think the last course better than the first. His own mind was ever amassing fresh stores of knowledge, and he delighted to make a feast of these for his brethren. Again and again, too, did he come to their aid, on very brief notice, and at considerable personal inconvenience, when a lecturer was unable to fulfil his engagement to them; and of this they had a most grateful sense.

After a professional visit to Newcastle in the beginning of March, he tells Dr. Cairns, "Since I came back I have been discoursing to Dr. Candlish's Bible-class, by his request, on a physico-theological subject, and I have promised a word to the Congregational Soirée of Lady

Yester's. It is pleasant even to sand the floor, or change the sawdust carpet of the outer vestibule of the house of God. Would that I could only give them a word in season!

"I am better than I was earlier in the winter, but constantly visited by returns of hæmoptysis, and compelled to be very wary and watchful.

"I ask myself often, whether it is mere languor and stupidity, or anything deserving to be called becoming contentment and composure, that keeps me from complaining and repining. I hope there is a little of sincere gratefulness to the Giver of all good gifts; but there ought to be, and might be, a great deal more.

"When are you coming to stir me up? You owe me a return for staring out of the window of the railway carriage at Berwick, in hope of seeing you."

Shortly afterwards, though "terribly over-worked, and far from well," he had to visit London professionally, and was unable on this account to be present at the meeting in Lady Yester's church to which he alludes. On the journey up, the lamp in the railway carriage went out. While his companions slumbered, or chatted together in the darkness, "I fell to musing," he says, "and then to trying how many verses of the Bible I could recall. I was very sorry to find I knew so few, but glad also to find I knew so many." During the week spent in London, he accomplished what one of his coadjutors asserted would have taken three weeks in any hands but his. "I have been counting my visits, and find that I have been four times at the Department of Science and Art, four times at the Office of Works, twice at the Council of Education, and once at the Treasury, besides all the other doings. I was much knocked about, but the weather was good, and the absence of lecture-work saved me from suffering."

Retiring to the country during the few weeks' interval between the winter and summer sessions, he for the last time visited his spring resort. Dr. Gladstone, to whom the following letter is addressed, had shortly before been appointed as one of the Commissioners for the inspection of lighthouses :—

"BRIDGE OF ALLAN, *April* 20, 1859.

"MY DEAR LIGHT, BUOYANT, AND BEACONAL ROYAL COMMISSIONER,—From the moment I set foot in Edinburgh on my return, till three minutes past four o'clock, Greenwich time, yesterday, when the guard whistled, the bell rang, the engine snorted, and the train 'for the North' started, I have not known what the feeling of rest was. When one piece of work was completed, instead of the trumpets playing 'See the Conquering Hero comes,' the drum-major, or some other noisy fellow, shouted out, 'Silence in the ranks.' *Order of the Day*, 'G. W. to be in two places at once, to do three things at the same time, to have as many hands as a Hindu god, and all his Sabbaths to be merely Sundays.' *By command.*

"In consequence of this order I have been showing the Museum to the Duke of Argyle's family, whilst I was giving evidence in a court of law on the nature of sea-water, and examining the candidates for an agricultural diploma, and visiting the glass-works with my class, and lecturing to the assembled teachers of Glasgow, and studying calico printing with Mr. Walter Crum, and writing certificates for my class, and adjudging prizes, and reading a paper to the Royal Society of Edinburgh on Cavendish, and paying away lots of money; besides many other things too numerous to mention.

"In sober seriousness, I have seemed for the last three weeks to hear a little imp constantly dinning in my ear

'*what next?*' and it was not one next, but a long line, the most of which I have either disposed of finally, or at least chloroformed, and left behind in a state of anæsthesia, guaranteed to last for a fortnight. The more pressing and clamorous I have brought with me, and am polishing off, beginning with your letter. . . .

"You ask for my health. I was decidedly the better of my visit to London. The stoppage of brain work; the spectacle of the great bee-hive, with all its drones and workers, honey-makers and honey-eaters, its constitutional queen, and assaulting wasps, always immensely exhilarating to me; the contact with the great little men who rule the world; the handling of that most wonderful invention red tape, which, according as you will, is so strong, that a Samson could not break a thread of it, and so weak, that if you breathe on it, it disappears like heated gun-cotton; the gazing face to face, and as one always feels, perhaps for the last time, at the good Faraday, and other great, lovable, or at least admirable men; the long profitable chats with the landlord of the Tavistock;[1] the genial controversies with Lady May, leader of Her Majesty's Opposition; the sweet face of dear A. There! I have got to the top of the hill, and I must stop a bit to recover my wind. All these London experiences did me good, especially as my Sabbath at Cambridge was, though a sad, yet a pleasant modulation in another key of the London strain.

"The change of weather has a little undone that good, yet I don't think seriously.—Your affectionate friend,

"GEORGE WILSON."

Ungenial weather lessened out-door pleasures while in

[1] Dr. Gladstone, his host, was then resident in Tavistock Square.

the country. "The hills all round, and even low down, had white mantles yesterday, and some of them are slow to part with them to-day. The only plants that appear to enjoy the weather are the snowdrops, and they come ready-made out of the sky." "Snow, rain, and hail, have apparently been recommended change of air, and come here in search of it. The day before yesterday another stranger, High Wind, Esq., whom I never met here before, paid the village a visit, and made a great row; but he has packed up, and I hear nothing of him to-day.

"I brought with me an aching arm, which, had it been a leg, I should have declared was suffering from gout. To-day, however, I am better, and the peace and quietness are, as they always do, doing me good."

At the close of May, in writing to Dr. Cairns, he alludes to the physical languor felt throughout the previous winter, and adds, "I cannot say that morally I have spent an unhappy or an unprofitable winter. The powers of the world to come draw nearer to me than ever, and stand in a more benignant relation.

"I have become wondrously indifferent to the praise of men, but increasingly anxious to do my daily work, which is far from unpleasant, honestly, heartily, and earnestly. I would count it no healthy token if I shrank from daily work. Far otherwise, I wish I were ten times stronger and healthier than I am, to do ten times more work in the great Taskmaster's eye. But in spite of many disheartening and even distressing things, and cares, and fears, and sins, I have tasted so largely of the mercies of God; the all-attractiveness of the blessed Saviour's character, and the perfection of his example, have risen more recently into such prominence before me; and the sense of a higher presence, enabling me to enter into communion with God,

and to pray acceptably unto Him, has so filled my heart, that the things of this life arrange themselves according to a new perspective, and seem much smaller and farther off than they did before.

"After a year's experience, I have every reason to be satisfied with my decision about the Chemistry Chair. I have never once repented it."

"*July* 20.

"I have been very busy, with a good deal of work connected with my office.

"In health, however, I am wonderfully well, and abundantly cheerful. I have had the opportunity this summer of taking part in several meetings of a religious character, and have felt more faith, and courage, and comfort in being at them, than I think I ever did before.

"I have increasingly to thank God that he makes my path clear to me, and that to spend and be spent in Christ's service is my chief desire. These are not things I write about to almost any one but yourself, and they are rather, as I always feel, to be buried in one's own heart, or brought out in prayer to God, than given to the light openly."

During this spring and summer one or two scientific papers were read to Societies. One addressed to the Royal Society has already received notice;[1] another was read to the Photographic Society;[2] and a third to the Botanical Society.[3]

[1] "On the Recent Vindication of the Priority of Cavendish as the Discoverer of the Composition of Water."—R.S.E. April, 1859.

[2] "On Dryness, Darkness, and Coldness, as means of preserving Photographs from fading."—"Journal of Photographic Society, 1859."

[3] "On the Fruits of Cucurbitaceæ and Crescentiaceæ, as Models of various articles of Industrial Use."—"Trans. Botan. Soc. 1859."

The month of August was spent in Burntisland, as reasons, to be found in subsequent letters, made it unsuitable for him to be at a distance from town. A letter to Mr. Charles Tomlinson, London, written on paper with the University stamp, gives one reason :—

"BURNTISLAND, *August* 3, 1859.

"CARISSIME CAROLE,—See, my dear friend, what a pass the Emperor of the French has brought us to! The University of Edinburgh transferred to Burntisland, which after all is not an island, and therefore not a burned one, but only a Trappean Peninsula, which looks out from the Kingdom of Fife, across the Firth of Forth, to Arthur Seat and Edinburgh, and invites the latter to dip its hot face and sun-stricken brains beneath its cooling waters. In short, as there can be no manner of doubt that the French are by this time half-way across the Channel, the University of Edinburgh has thought it proper to put its valuables in safety, and accordingly—but modesty prevents me enlarging on the topic—the Professor of Technology is secure here for this current month." A more sober reason given is, that "the lease of my laboratory has expired, and the New Buildings are not (Hibernicè) begun, so that I have before me the formidable horrors of a flitting. The bother of this is very considerable, and is one reason for my keeping so near Edinburgh." "We in Scotland call a removal 'a flitting,'" he tells Mrs. John Gladstone, "I suppose on the antithetic principle that it is a process as totally unlike the flitting of a butterfly or a bird as can well be conceived; and when all the contents and machinery of a laboratory must be transported, it is no easy matter. But fancy, further, that whilst turned out of my old den in the middle of September, I have no new one to go to. A butterfly

preparing to flit from one rose to another has nothing to pack up (or roll up) but its trunk, and is certain to leave none of its goods behind; but if, after deserting its ancestral roseleaf, it should find that it had left the 'last rose of summer,' and that there was no other to receive it, it would doubtless find itself in a sad predicament. In such a predicament am I.

"I have been in a heap of worries. This is worry the first, and most tiresome. . . .

"With all this, let me not forget to say that I have enjoyed a peace and composure of spirit, interrupted only by a few impatient bursts, such as I have seldom known. The meaning of Life, the purpose of God, the worth of this world and the next, have all risen into a prominence which they had not formerly displayed. I was not expecting or seeking this. It came upon me like the wind blowing where it listeth. I have rejoiced to welcome it, but it has for the time driven me rather in upon my own thoughts than led me to pour them forth to others.

"I should add [as an excuse for not writing] that I have an immense deal of official correspondence to keep up, which devours the writing faculty, and also that I am trying to be done with the Memoir of Edward Forbes. There, however, some of those who should have been foremost to help have forgotten their promises. . . . I am sickened at the work."

To his cousin Alick he gives an epitome of his engagements since spring. Amongst them is a lecture in Glasgow, which has been noticed already in the list of things to be done all at the same time. The lecture was requested by an Association of Teachers. "It was a capital audience, and I had prepared with some care an hour's written discourse on the 'Educational Value of Industrial Science.'

I had also, however, taken with me a sort of appendix, consisting of the best part of an old lecture; and when the hour was done, I left them to say whether I should stop or go on. They left me in no doubt as to their choice, so I gave them another half hour, in which they heard some things which I hope would do them good. . . . It is curious the feeling of having an audience like clay in your hands to mould for a season as you please. It is a terribly responsible power. . . . On looking back I am struck with the little good I *know* these performances to have done, or can on the highest estimate suppose them to have effected.

"Against that, however, I can set off a steadily increasing indifference to applause or commendation. I do not mean for a moment to imply that I am indifferent to the good opinion of others. Far otherwise; but to gain this is much less a concern with me than to deserve it. It was not so once. I had no wish for unmerited praise, but I was too ready to settle that I did merit it. Now the word 'duty' seems the biggest word in the world, and is uppermost in my serious doings. I must not deny that this feeling is helped by bodily quiescence, to use no stronger word. My physical activities and locomotive powers steadily abridge their circle of energy. I am thus debarred from the restless life I would otherwise lead, and I fear sometimes that I set down to rational contentment what is only lazy valetudinarianism.

"Yet I have a peace of mind and a calm joy, when not positively suffering (and then they look through the darkness) such as I did not know before. Of such feelings it is not wise or safe to write. They suffer by handling, and I say no more about them. I was trying to make a clean breast of it, and have only achieved this long drone. Set it

down in part to an aching arm, and the anti-rheumatic practice it demanded. . . .

"I hope to be at the Aberdeen meeting of the British Association a month hence, and if so, will write you all about it."

One more quotation from Burntisland letters; it is addressed to Dr. Cairns:—"In body and soul I am at peace with God and man, thanks to him who giveth us the victory over all our enemies. That wondrous 15th chapter of 1st Corinthians! It stirs me like a trump of doom. I cannot read it aloud without finding my voice break down; all the immortal dead I know seem to gather about me as its mingled pathos, and jubilation, and summons sound out from its solemn diapason. Tears and confession and thanksgiving take the place of articulate didactic words, and the image of the heavenly obliterates all else.

"It would be a very great kindness if you could lend me your sermons on as much of the Corinthians as you please, but especially those on the Resurrection, the physical aspect of which has much occupied me, and been twice *preached* upon."[1]

The hope of being present in Aberdeen at the meetings of the British Association was realized. A house was taken, five friends from England forming with George Wilson and his sister a most pleasant family party, of which many happy memories remain. A pretty full account of the doings of the week, so far as George was concerned, is given in writing to his brother.

"*September* 23, 1859.

"Jessie and I got home last night from Aberdeen, where we have spent ten delightful days, and before going in to

[1] A friendly debate on these Sermons on the Resurrection, which were talked over amidst the hurry of the Aberdeen Meeting, was the last discussion held by those friends in this world.

the galley oar again, I send you some account of our doings. . . . My paper[1] [to the Chemical Section] will not at present be published even in abstract; but I believe it to contain some curious, novel, and important observations on the ancient history of the Air-Pump. I had the pleasure of seeing Faraday, Graham, Christison, Gassiot, Robinson, William Thomson, De La Rue, besides others, listening with interest, and we had profitable talk about it after. To dispose of myself:—I read to the Natural History Section a brief paper on the Gymnotus,[2] as used by the Indians at the present day to give shocks. Two of the Gymnoti are coming *alive* to me next summer.

"In the Statistical I gave them a blast about Colour-Blindness,[3] preliminary to moving for a committee to inquire into the statistics of the question on a large scale. I have got the committee, and 10*l.* to carry out the scheme. In the Chemical Section I also read a paper for Walter Crum, and one for James Young. Altogether I was more than satisfied with my share in Association work, and fulfilled every personal project that took me there. . . .

"My lungs warned me, by some ugly bleeding early in the week, to be careful, so that I did not go to Sir R. Murchison's Lecture, or to the first Conversazione. The second lecture by Robinson of Armagh was a great treat, or rather, I should say, the experiments were. They were exhibitions of the electric spark on the largest scale, including all the kinds of electric light, the apparatus being brought from London, and of the finest kind. . . . The beauty of some of the lights is so great, that I could not

[1] "On some of the Stages which led to the Invention of the Modern Air-Pump."—"Report of Brit. Assoc. 1859," p. 89.

[2] "On the Employment of the Electrical Eel, *Gymnotus Electricus*, as a medical shock machine by the natives of Surinam."—*Ibid.* p. 581.

[3] "On the Statistics of Colour-Blindness."—*Ibid.* p. 228.

help uttering, when I saw them, a cry of joy. They are good for any man to see—poet, painter, philosopher. He ought to get good from them.

"There were two Museums, one Archæological, the other Geological, but my lungs would not allow me to visit either. I went to the second Conversazione solely to see the electric lights again, and after witnessing them went home."

His warm sympathies were called forth at this time on behalf of one of his colleagues, Professor Kelland, whom he had hoped to meet at the Aberdeen meetings, but who, instead, was lying with fractured limb at a railway station, near which a collision had occurred. On returning home, George sent him a full account of proceedings, as the only method open to him of sending a ray of light into the sick-chamber of his friend. The letter has been published in full;[1] we take from it, in part, to complete our sketch. "I write you mainly to ask if I can do anything for you, and to beg that you will not hesitate to command me to the utmost. It will be the greatest pleasure to serve you in any way; meanwhile, I note down a point or two about the British Association at Aberdeen, which may not be uninteresting.

"We had a numerous meeting. Great are the attractions of a Prince, and had he [Prince Albert] remained throughout the week, we should certainly have had to hold our meetings *al fresco*, and to *bivouac* in the open air. Wisely, however, he gave but one day to the sections, and the stir moderated thereafter. . . . We had a Red Lion dinner on the Monday, when Owen presided, and about sixty men from all the sections sat down. We broke up very early, but not before Blackie had astonished them with one of his songs. I welcome these dinners for the opportunity they

[1] "North British Review," Article "Professor George Wilson." February 1860.

afford of seeing men you have long known by report, and wish to know better. . . . I spent a very happy and instructive week, and came back a lowlier man. These meetings ought to make one humble. I hope they made me so." At the Red Lion dinner Professor Blackie caused astonishment otherwise than by his song, in coming from one end of the long room to the other in order to enfold George Wilson in a loving embrace.

On returning to town, the difficulties to which he had been looking forward, in making preparations for the winter, came in full force. The number of visits to lawyers and others, and the necessary worry kept up till the very day his lectures began, were very wearing out, and a poor preparation for the labour and excitement inseparable from an opening session, of which he had said long before, "At the beginning of our session I have always more to remember than I can call to mind. . . . Its constant high-pressure work has left me with great weariness both of soul and body."

Where he was to deliver his lectures remained an unsolved problem till near the close of October. By the kindness of Professor Donaldson, however, the use of the room he had occupied in the University, and which he was quitting for the new Music-Room in Park Place, was obtained. So little time was left, that only by constant importunity and much labour was it got ready in time, the introductory lecture being delivered with wet walls, and with carpenters' shavings on the floor.

To his life-long friend Professor Christison he was under even greater obligations, as his laboratory within the University walls was given up by him to Dr. Wilson for the winter. Here was a circle completed: the youthful chemist who in that very laboratory first obtained familiarity with

the practice of his favourite science, now returning to it as one whom men delighted to honour, with, in his turn, young and ardent students working under his directions. It was found to be too small to accommodate Dr. Wilson's numbers, and a second laboratory, also within the college, was fitted up, but never used, the arrangements in it being scarcely completed when the session began. His opening lecture was on "Technology as a Branch of Liberal Study," and was chiefly devoted to illustrations of the benefits resulting from science and art, theory and practice, doctrine and work, acting and reacting on each other. Viewing his own Chair as in some measure the uniting link between the two, he considered historically the evils resulting from every attempt at a monopoly in knowledge, as, *e.g.*, with the monks and knights of old. Even the Universities of Christendom had been tainted with the spirit of selfish exclusiveness; and thus the "intellectual blood which should have flowed in the veins of the World, was left to stagnate in the heart, and paralyse its motions."

The plan and purpose of his Chair, and the Museum in connexion with it, are more fully developed in this lecture than in any previous one; and, as befits his intermediate position, he pleads, on the one hand, that scientific knowledge be extended and made serviceable to every practical worker; while, on the other, he shows what claims the workers in pure science have on the gratitude of all.

The crowded audience on this opening day seemed to give him a new welcome, and open before him a bright vista of useful and honourable service to his fellow men. Each succeeding day confirmed the promise of this one, till the difficulty came to be how his audience could be accommodated in the lecture-room. The disadvantages of previous years in regard to such matters became more than ever

obvious, and it was felt that now, for the first time, Technology was having fair play. So passed the early part of November, each day adding to the roll of pupils, and he exhibiting an energy and freshness surprising to those who knew the state of his health, the hemorrhage, which had increased to more than the usual extent for two months previously, being accompanied by sadly diminished appetite. But his buoyant cheerfulness compelled one to forget all this, and, while in his presence, to share the happiness of which he had apparently a store, not only enough for his own needs, but to spare for all around him. "It is a becoming act of Christian thanksgiving," he wrote to a lady on her birthday, "to acknowledge God's kindness in granting us so great a gift as life." Not the less did he feel this that he never looked forward, but sought, from the time of entrance on his public career, to "live as a dying man; the best preparation for a happy life; the best preparation for a peaceful death." "I spin my thread of life from week to week rather than from year to year." About six months previously, when visiting his friend Miss Abernethy, he said solemnly to her on parting: "Janet, I am trying to live every day so that I may be ready to quit on an hour's notice." More strongly were his desires apparent in the few words he addressed to her nephew, Dr. Niven: "I am resigned to live." Such readiness for both worlds is difficult to realize. This life seemed to him so full of exhaustless springs of delight, that the only way of reaching in thought his elevation, is by entering into the spirit of his favourite words: "To be with Christ is far better."

It has been supposed by some that he had at this time a presentiment of death being close at hand. This has originated in their knowledge of some of those expressions of consciousness of his physical liabilities, which were

frequently used by him. Further than that he was aware his time on earth could not be prolonged *much* longer, we believe he had no presentiment such as has been imagined. In October he writes: "I find myself steadily getting weaker, and less fit for work. Constant attacks of bleeding from the lungs sap my strength, and warn me how easily I would give way under any acute attack of illness. I am cheerful enough, nevertheless, and it may please God to prolong my days; but I am compelled to look gravely at the opposite possibility."

He has himself been the narrator of his life. Once again, and for the last time, let us listen to him telling his brother how the busy month has passed:—

"ELM COTTAGE, *Nov.* 17, 1859.

"MY DEAR DANIEL,—I have determined not to let another week pass without writing, although duty seems to say, 'Write at your lectures,' and a pair of barking lungs bid me lie down and sleep. I write in bed, which is the explanation of any zigzagginess you may perceive in the slope of the words. I am thankful to creep early to my couch, but I don't 'turn in' till about 1 A.M. generally.

"We have had a month of great excitement, in which I have had my full share. First came, as a sort of preliminary gymnastic, an address to the Pharmaceutical Society.[1] Then the Brougham Banquet set us all astir. It was a totally unsectarian meeting, and, so long as I was able to remain, it went off famously; but I lost, I believe, the second-best speech, that, namely, from the Lord Justice-General M'Neill.

. . . . . .

"Two days after came on one day the installation of Sir

1 "The Education of the Pharmaceutical Chemist."—"Pharmaceutical Journal," Dec. 1859.

David Brewster, as Principal, and the election of Chancellor and Graduates' Assessor (*i.e.* representative in the University Court). The former the Senatus had all to itself. . . .

"Well! carrying our newly-made Principal with us, we adjourned to the Music Hall, where, by a dreadful, but unavoidable arrangement, we were locked in, after the voting began, and had to listen to a roll of 1300 names read over. However, it was an interesting scene, which I witnessed to advantage from the platform. . . . The votes for Chancellor were watched with immense interest, till it was quite certain that Brougham must win; and then the faces showed, like sun-dials, which Star they obeyed. I admired the pluck of the defeated men about me. It is a grand feature in *our* national character, and is not in the Yankee nature, to submit to a majority, and take a fair defeat uncomplainingly. . . .

"Next week came the opening. I hope to send you with this Sir David's speech. He gave me a good word, which the students took in hearty part.[1]

"The day after, our separate classes began. I lectured for Kelland at 10 o'clock, and for myself at 12. You will be happy to learn that he got back to Edinburgh on Saturday from Hitchin, near London, where he has been lying for nine weeks with a compound fracture of the left leg, above the ankle. I found him very hearty and cheerful. He gave me a most graphic account of the railway smash, and what befell him, ending, as one likes to hear a man end, with saying, that he had no idea there were so many

[1] Sir David, in speaking of the Chair of Technology and the Industrial Museum, refers to their being "under the guidance of Dr. George Wilson, one of our most distinguished philosophers."—"Introductory Address by Sir D. Brewster, on the Opening of Session 1859-60," p. 17. Edmonston and Douglas, Edinburgh.

kind people in the world: that everybody had been kind to him.

"When I came back from Aberdeen, I wrote him an account of matters there to amuse him, and added, that if I could do anything for him I should be glad. It never, however, entered my head that he would ask such a non-mathematician as myself to open his classes for him. When he did I could not refuse, and I am glad I did not, for the lecture was graciously received by a crammed class-room, and the class has not fallen off in numbers. Neither has my own class suffered. To get all ready I have, indeed, had a battle, which would only have exhilarated me had it not overtasked me physically, and ended in giving me so scattered a series of domains, that I am constantly providing what an Irishman loves so much, *i.e.* an alibi. My laboratory is in two places; my lecture-room in a third; my Museum in a fourth. Nevertheless, the lecture-room within the University is a great matter, and old students have returned, and new ones have come, till I have enrolled eighty-three as pupils—the biggest class I have had, and considering that it is not imperative, very creditable to all concerned.

"When the Friday came I could have gone to bed, but instead I had to travel to Glasgow in most inclement weather, and thereafter to drive five miles out, through darkness and rain. Next day I was up before breakfast, and at work from about six onwards in connexion with a patent-infringement, affecting a very kind friend.

"The result was a terrible cough, cold, &c. which blisters I hope are dispelling; but I lost last Saturday with election for Rector by the students, at which we all had to be present. What a row in the quadrangle! I could scarcely reach the Senatus Room, but fortunately had on my gown and cap

(we have taken to square caps), and when the students saw that, they handed me through the shouting crowd, who were waiting to hear how the vote had gone, and seemed on both sides coming to *Neaves!*[1]

"All this is terribly egotistical. . . . I hope to add a P.S. to-morrow.—Ever lovingly yours, GEORGE."

The severe cold under which he had laboured all that week did not cause special anxiety. Frequently in the years gone by had work been carried on with similar symptoms, and with eager anticipations of the rest attainable on the Saturday and Sunday; for one of the most touching features of his case was the good resulting from even a little ease. During this month of November his friends had been watching him with evident solicitude, kindly suggesting caution and care, then unattainable. It amused him much when Dr. John Brown proposed, as the best plan, "to put him under trustees," who should look after his health.

On the week in which the letter we have given was written, the days were counted off with longing for the Saturday, with its opportunities for care and nursing. It was with distress, therefore, that his sister learned his intention, in such a state of health, of giving his students a second lecture on the Friday. Seeing her about to remonstrate, he with *naïve* simplicity gave as a reason, the force of which must be evident to any sensible person, "They are not *up* in the Atomic theory."

The breakfast table was usually loaded with books of reference for the subject of the day's lecture, and notes in pencil were then written for it, in addition to those in use from year to year. So it was this Friday morning; and after breakfast he went into town with his wonted cheerful-

[1] The choice was between the Right Honourable W. E. Gladstone, M.P., and Lord *Neaves*.

ness, desirous of obtaining information to go by that day's post to his brother in Canada, in the postscript to his letter. Afterwards it transpired that he had felt pain in his side that morning. It was a busy day in town. After the first lecture to his class, new pupils came to be enrolled, many visitors called, and he was compelled to converse much. Closing his Canadian letter, he says, "I have been at work all day." Not having ascertained all that was desirable, he promises to give the result of further inquiry by next post.

The second lecture was delivered with great difficulty, and with an apology to his students for sitting while addressing them.

On his return home, between four and five o'clock, his sister was startled by his appearance. Why, she could scarcely tell, but a nameless dread of impending danger fell heavily on her heart. This was not diminished by his saying, in a low and constrained voice, "I'll just creep up stairs." After sitting for half-an-hour on a low chair in the drawing-room, with an air of great prostration, and not saying a word, he was with difficulty helped into bed. The pain in his side was treated as pleurodyne, from which he had frequently suffered; but next day his medical attendant, Dr. J. Matthews Duncan, being apprised of his illness, came, and announced that inflammation of the lungs and pleurisy were both present.

Now then had come the time to which he had so long looked forward. Many talk lightly of death, as if to the Christian it has no terrors. Not so did he, and few have so often been on the verge of the grave and come back to speak of it. In 1847, he wrote to a friend in failing health :—"I am persuaded, from what I have experienced, that the world fills but a small space in the thoughts of one near to death.

I believe from what I have felt when brought very near to the grave, that the engrossing, devouring idea is, that of one's own individuality or personality,—and of God's personality. The prevailing feeling is that of the great Judge waiting for our soul as if there were no other soul in existence, and we, in our naked spirituality, without one relative, earthly friend, or well-wisher, about to pass away into the darkness, and stand before God. No transmutation which chemist or alchymist ever hoped for, or ever realized, has equalled, or can equal, the strangeness of that transformation which we shall undergo when we gasp out of this life into the next. Chemistry will not help us then. 'If there be knowledge, it shall vanish away.'" In 1848, a letter to Mr. Daniel Macmillan contains the following passage :—"I have been reading lately, with great sadness, the Memorials of Charles Lamb and the Life of Keats. There is something in the noble brotherly love of Charles to brighten, and hallow, and relieve the former; but Keats's deathbed is the blackness of midnight, unmitigated by one ray of light.

"God keep you and me from such a deathbed! We may have physical agonies as great to endure. It is the common lot. I feel that our heavenly Father can better choose for us than we can for ourselves, of what we should die; but I pray our blessed Lord and Master to be with us in our last fight with the last enemy, and to give us the victory. If He does, what shall pain be, but, like other bitter medicines, the preparative for the unbroken health of an endless life?" And in 1857 he says :—"Often and often, as I have asked myself of what should I die, I have felt that, had I the choice offered me among physical deaths, I should not know how to choose, and would leave to God the appointment of the mode of dying, beseeching only to

be spared maddening agony, and to be kept, above all, from losing faith in the blessed Saviour."

Those expressions of trust and hope are almost the only clue we have to his feelings during the few days of his illness, but they are sufficient.

It had ever been his custom, in previous attacks, to carry on his daily work in bed as much as possible in the same way as usual. Books and writing materials surrounded him, and the day was divided into portions: so many hours for writing and study, so many for lighter reading, and so many for rest. Lively talk and fun made his sick-room a place of real enjoyment at most times, his ailments often being the subject of the jests. He disliked having any one to read to him, saying it sent him to sleep.

Now all was different. Scarcely a word was uttered, and his weary look of utter prostration, being interpreted as a meek supplication not to be disturbed, as few words were addressed to him. There *seemed* to be little pain, but no inquiry was made as to this. A distressing restlessness, and difficulty in coughing, were the most marked symptoms. It was touching to see the attempts to read to himself as formerly. A light newspaper was taken up at intervals throughout the first day of confinement to bed, but as often wearily laid down, with apparently no knowledge of its contents.

The only earthly care that appeared to disturb him was his class; and early on Monday morning the following note was written at his request to Professor Balfour, his sister kneeling with the paper on the bed, while with effort he slowly dictated:—

"My dear Balfour.—A sudden and unexpected attack of pleurisy, with accompanying inflammation of part of the

lung, came on on Friday; and, as you may suppose, lays me aside from lecturing, much to my distress, at the very beginning of the session.

"It would be a very great favour if you could lecture for me this week, beginning on Tuesday. My present topic is the Amylaceous group, including starch, gum, sugar, and cellulose, and falls quite in your way. My assistant will see that the carriage goes down every day to bring you up, with diagrams and specimens, and four assistants will be at your service every day. I trust you will be able to render me this service; but if you cannot, please inform the bearer that I may make other arrangements."

Dr. Balfour kindly consented, and no further allusion was made to temporal affairs. Towards mid-day, on Monday, he requested a note to be addressed to Dr. Duncan, saying, that as there was no improvement, he thought it would be prudent to have another medical friend associated with him, naming Dr. Bennett as the one he should prefer. This done, he asked his sister to read to him, from the "Athenæum" of the week, Captain M'Clintock's Narrative of his Voyage to the Arctic Seas. Towards evening there seemed tokens of Death's approach, and the medical men could only cherish fond hopes from the marvellous recoveries he had made before. His voice also was clear and strong, and this was a hopeful symptom. Stimulants were ordered to be given at short intervals during the night. On the first being brought, he looked at it with reluctance; but learning the doctors' wishes, he made an effort to take it, saying afterwards, "I did not think I could have swallowed it." The good effect of the draught soon appeared in the distressing cough being soothed to quietness. "The doctor was right," he remarked; and the next restorative was taken

with readiness. The night passed peacefully, and at its close he said, with a gleam of his old cheerfulness, "I think I have turned over a new leaf." Hope once more animated his nurse's heart: she had seen him as ill before, and yet recover. The doctors confirmed this hope, saying, that if a few days were got over, all might be well. So sanguine notes were addressed to several friends, Dr. Cairns amongst the number. But at mid-day the peculiar and distressing restlessness returned. The senses were preternaturally acute, that especially of smelling, perfumes of any kind being unbearable. The only soothing offices were a continual change in the position of the pillows, and bathing face and hands with vinegar. His hands had been remarkable for a rare beauty in the rich carmine tinting the palms, and contrasting with the pure white skin. "Your hands seem on fire," had been said to him once; and much admiration had they elicited. Now it was observed while bathing them that the delicate palms and nails were black. To one so conversant as he with such symptoms, this was an unmistakable token, had there been any doubt before, that the pitcher was broken at the fountain, and the spirit summoned to return to Him who gave it. Still not till the second medical visit in the afternoon was hope quenched in others, when a telegraphic message was sent to Dr. Cairns. George expressed desire to converse with Dr. Duncan, but he was unable to do so from the difficulty in breathing.

In the afternoon he asked his sister to read the "Athenæum" to him, saying, "You know I always read it from beginning to end:" while listening, occasional remarks showed that he clearly understood what he heard. He surprised her by saying abruptly, "The room will be darkened at nine; I wish to get to rest." She believed this implied being quiet for the night, and replied, with many wondering thoughts, "Very well."

Occasionally an inquiry was made as to the hour, with some reference to this "getting to rest." About six o'clock the 23d Psalm was read at his request, and then some detached verses,—"When thou passest through the waters, I will be with thee: and through the rivers, they shall not overflow thee: when thou walkest through the fire, thou shalt not be burned; neither shall the flame kindle upon thee, for I am the Lord thy God, the Holy One of Israel thy Saviour."

"Fear thou not, for I am with thee: be not dismayed, for I am thy God: I will strengthen thee; yea, I will help thee; yea, I will uphold thee with the right hand of my righteousness."

"Let not your heart be troubled: ye believe in God, believe also in me.

"In my Father's house are many mansions: if it were not so, I would have told you. I go to prepare a place for you.

"And if I go and prepare a place for you, I will come again and receive you unto myself, that where I am, there ye may be also."

"To him that overcometh, will I give to eat of the hidden manna; and I will give him a white stone, and in the stone a new name written, which no man knoweth saving he that receiveth it."

"To him that overcometh will I grant to sit with me in my throne, even as I also overcame, and am set down with my Father in his throne."

"Read me something secular," he then said, "I don't wish to go to sleep yet." Possibly the excessive tremulousness of voice in reading such heart-stirring words, suggested this change; for no act of self-denial was too great for him. Standing near the gas, for the light was kept low, his sister

spent the next three hours in continuous reading, picking out from various journals lying around, papers interesting but not exciting. One, it is remembered, was on Gems, another on the Scilly Isles, and occasional observations showed he was listening with perfect comprehension. His mother entering the room while he was alone, for a few minutes, saw him evidently engaged in prayer, and quietly withdrew.

Dr. Cairns arrived at nine o'clock, and went to him almost immediately. Though unaware that a summons had been sent, he showed no surprise at the presence of this dearly-loved friend. "I found him very low," Dr. Cairns says, "and to my eye—long familiar with death—it was only too visible in his face. He was quite conscious, though he could speak but little. He asked me to pray, which I did, and he fervently assented, saying, 'I am in the hands of a good and kind Redeemer; I rejoice in that every way;' and in answer to my query whether he had peace, replied, 'Yes,' with his usual sweet smile, sweeter than ever on the pallid face of death. On leaving the room, he said, 'Come as often and stay as long as you please.'"

His kind friend Dr. Duncan once more visited him, and when he left, the oft-expressed wish for "rest" was repeated. Dr. Cairns returned for a few minutes: to the inquiry made once again, "Is all peace?" came the same reply "Yes," with a smile. This question elicited the only smiles that had been seen in those days of weakness. "Shall I pray with you?" "Yes, but short," evidently feeling the moments numbered. His uncle coming in, they shook hands and parted, he saying, "Don't vex yourself about me; you've been very kind to me." His mother then came and kissed his hand; he in reply (knowing she could not hear his voice) raised his right arm, pointing significantly heaven-

wards. Each one was calm outwardly, the utmost self-control being exerted, that he might not be distressed by witnessing emotion on their part. A love of quiet, and avoidance of anything like bustle, were ever strongly characteristic of him, and now this was borne in mind. He was therefore left alone with his sister, the light being lowered as much as possible: she once more bathed his face and hands; it was evidently soothing, and he said, "How can I ever thank you for all your care and kindness?" For the first time she then expressed her consciousness of his state, by saying, "You're going home, dear." With distinctness he uttered the words, "I've been an unworthy servant of a worthy and gracious Master;" then the voice broke, and only one word more could be distinguished, "sin." Two portions of Scripture were repeated with the hope of pointing from sin to the sin-Bearer. "If any man sin, we have an advocate with the Father, Jesus Christ the righteous." "Ye are complete in Him." A very marked change appearing in his countenance, a bell at hand was rung, which brought his mother and John Cairns again beside him. "He was breathing rapidly and with difficulty, and his end was near.[1] I shortly prayed again, and a slight elevation of the eyes showed that he recognised me. Your mother, Jessie, and I watched him intently as the breathing became more laborious and slow, and the eyes nearly closed. At length a slight convulsive effort announced almost the last struggle; but his breathing was, after a pause, resumed, and the actual falling asleep was so gentle that it could not be distinguished. His features retained the most peaceful expression," and thus at eleven P.M. was his wish fulfilled, and he entered into the *rest* for which he had so longed.

[1] We quote from a letter written by Dr. Cairns, an hour later, to the absent sister Jeanie.

CHAPTER XII.

VALE!

"Thanks be unto God, who giveth us the victory!"

"Wrong not the dead with tears!
Think not the spirit fears
To cast away its earthly bonds of clay,
To rise from death to everlasting day!
Wrong not the dead with tears!
A glorious bright to-morrow
Endeth a weary life of pain and sorrow."

WYKE BAYLISS.

THE tidings of George Wilson's death spread next day with mournful speed. As often happens, his long struggle with disease had led to the hope that again he would triumph over it. "We had begun to fancy that he possessed, not a charmed, but a blessed life, which was to be prolonged for further usefulness." The illness, also, had been of such short duration, that many knew not of it. A gentleman, who had written to him a few days before, and received no reply, went on the morning after his death to the University, unaware of the state of things, to make inquiry about him, and addressed to the first student he met, the question, whether he knew if Professor Wilson would be at the College that day. The sole reply was a burst of tears.

Professor Balfour met the class, according to previous arrangement, and announced to them the death of their much-loved teacher. A student, in reply, expressed the

dismay with which the tidings had been heard, and the grief with which they could not but regard the mementoes around—class specimens and diagrams—without hope of again hearing the voice that had expounded them. "Even in classes never personally connected with him, the students showed their sense of the common calamity, by the hushed attention, and even reverence, with which they received every allusion to his memory."

For some days sorrow was felt in many hearts throughout the city, not among any one class in particular, for rich and poor, learned and unlearned, seemed equally affected. The experience of one seemed that of all: "Though not much in the habit of meeting with Professor Wilson, he felt almost as if suffering from a family bereavement."[1] In the Chamber of Commerce a touching allusion was made by its Chairman,[2] before reading a report on the Industrial Museum: "The Technological Chair promised to be one of the most popular in the University; and by none, next to his own relatives and personal friends, will his loss be so much deplored as by those who were more immediately connected with him in his class, the laboratory, and the Museum, even to their most humble dependants, who worked as much from love as duty. Who, indeed, would not have worked for Dr. Wilson? Though not a stone had been laid of the building which was to be the Industrial Museum of Scotland, it had obtained a name that reached to distant lands, from which gifts were continually flowing in to assist the Museum, established with so much diligence and success." A lecture to this body had been promised by Professor Wilson in the December following, the subject

[1] Mr. Charles Cowan, at a meeting of the Merchant Company, Nov. 25.

[2] Mr. R. M. Smith.

having reference to the combination of masters and workmen in industrial pursuits.

An instance of the love of dependants was strikingly afforded in the case of a workman whom he had for many years employed occasionally, and with whom, as was his wont, many a kindly word and jest had passed. This man, now old and feeble, was lying ill at the same time as his friend, and, knowing the strength of his love, the relatives around tried to keep him in ignorance of Dr. Wilson's death. The attempt was vain. It was the one subject on every lip, and learning it from a visitor, he sank from that moment, unable to bear the shock.

Some few were able to forget themselves in his joy, as when one lady said, on hearing of his dismissal, "How glad I am!" so intensely realizing the blessedness of the change to him, as to rest in that for the time. But the greater number could only try to hush their grief to submission; and his words on John Reid came unbidden to remembrance, as if giving the most fit expression to their mingled feelings :—

"Thou wert a daily lesson
Of courage, hope, and faith;
We wondered at thee living,
We envy thee thy death.

"Thou wert so meek and reverent,
So resolute of will,
So bold to bear the uttermost,
And yet so calm and still.

* * * * *

"Well may we cease to sorrow:
Or if we weep at all,
Not for thy fate, but for our own,
Our bitter tears should fall.

"'Twere better still to follow on
The path that thou hast trod,
The path thy Saviour trod before,
That led thee up to God."

Two of his fellow-professors wrote on the first impulse of sorrow as follows:—"The intelligence of the death of my beloved colleague, your son, has quite unnerved me. Of the loss which Scotland has sustained others will speak; suffice it for me to state, that I have lost a friend, the brightness of whose genius was only equalled by the warmth of his heart. When lying far away, wounded and low, his ready sympathy and aid cheered me; and it is sad to think that I shall not be able to return his kindness in this world. But he did it as a Christian, as he did his every act, and he shall in nowise lose his reward. Think of him as entered into his rest, where his bright spirit basks in the full sunshine of that Presence which made it shine. May He comfort you, and teach you to acknowledge the words which your son addressed to me in this room just a week ago, 'It is good for me that I have been afflicted.'"[1]

Another[2] says, "You cannot wish George Wilson back in this world. His soul was well fitted for a better; whilst his body was not fitted to remain in this world without much continued suffering, borne so unrepiningly for the sake of those he loved.

"His memory will always remain with us tenderly cherished. His elegant and graceful mind, his genial and happy spirit, made him many friends, but never a single enemy."

At the next meeting of the Philosophical Institution, before the lecture began, Mr. Smith, the Vice-President, alluded with tenderness to the loss they had sustained; "We can

[1] Professor Kelland. [2] Professor Playfair.

all remember—alas! it is now only in memory that we can recall the pleasure—how often he has charmed as well as instructed us here; how often, in his prelections from this desk, the clear, scientific exposition has been enlivened and adorned by his graceful play of fancy. . . . At the risk of intruding within the domain sacred to private friendship, I would venture to say, that a gentler, nobler, more true-hearted man we have not left among us."

Biographical notices appeared in many of the periodicals of the day. From one by his friend, Dr. John Brown, we have made extracts occasionally. In a French Review, L'Abbé Moigno says, "Sa mort à un âge si peu avancé (quarante et un ans) est presque un malheur national."[1] From America there soon rebounded similar testimonies: "The University of Edinburgh has lately suffered severely by the death of one of its most distinguished teachers. The department of science has been specially unfortunate. Since the death of the venerable Jameson, Professor Forbes, whose fine genius and extensive erudition gave promise of an illustrious life, has been laid in the sepulchre of his fathers; and ere yet his country, and we may say the world of science, has ceased to mourn for this most gifted of her children, another equally honourable and beloved has been laid in the dust. The name of Professor George Wilson, whose recent appointment as Regius Director of the Industrial Museum of Scotland, and to the Professorship of Technology in the University of Edinburgh, was hailed with so much satisfaction by all who had any acquaintance, either with his personal character or numerous contributions to literature and science, will, we are sure, be held in lasting and affectionate remembrance."[2]

[1] "Cosmos," le 6 Janvier 1860.

[2] "The Canadian Naturalist and Geologist," June, 1860.

Requests from the magistrates, and the representatives of public bodies, that his funeral should be a public one, at which they might be present, continued to pour in during the week subsequent to his death. Amongst such proposals the most touching and gratifying was a letter from "An Artisan," in a newspaper, suggesting that every working-man in the city should follow the remains to their last resting-place. These requests for publicity could not be put aside, though it was felt that privacy would have been more in accordance with his retiring modesty of character. The torrent of love, however, carried all before it, and on Monday, the 28th November, the interment took place. A bright sunny day it was, as if for once that gloomy month cast off her despondency, in acknowledgment of the truth, "Light is sown for the righteous, and gladness for the upright in heart," and as if the influence of the bright and sunny spirit still lingered to shed a parting radiance when the body was laid to rest in hope.

The company of personal friends assembled at Elm Cottage joined in a short religious service before leaving the house; Dr. Alexander presiding over one group, and Dr. Cairns over another. We—now conversant with his life—can imagine why the latter chose the 15th chapter of 1st Corinthians, and can understand what tender memories crowded on him, making the voice tremulous with suppressed emotion while reading it. A prayer followed, and then the carriages with private mourners passed slowly into town.

On the long line of streets through which the cortége defiled, the shops were closed, and "business suspended for a time in other parts of the city: multitudes of both sexes crowded the way; and as the hearse moved along, many tears were shed, and the crowd looked on with bated breath, and even the rude and thoughtless uncovered their

heads, and offered their silent tribute of homage. Never before was such a tribute of respect and love offered at the grave of any of our citizens."[1] On through Princes Street it came, every balcony and window filled with gazers, till at the Royal Institution, Mound, the climax was reached, by the public bodies there awaiting its arrival joining in, and the crowd upwards to George Street forming one dense mass of onlookers. The arrangement then made was that first in order were the members of Dr. Alexander's congregation; after them the University students, those of the Technological class keeping together; the Pharmaceutical Society; the Royal Scottish Society of Arts; the Chamber of Commerce; the Philosophical Institution; the Merchant Company; the Senatus Academicus in their gowns; the Lord Provost and Magistrates in their scarlet robes; then came the hearse, and—following it—his empty carriage, familiar to Edinburgh eyes, and associated with pleasant thoughts now turned to sadness. Private carriages and the general public brought up the rear, the whole number being not fewer than a thousand.

While all move slowly on, four abreast, through the picturesque portion of Princes Street yet to be traversed; and while the crowd thickens on every point of eminence, let us proceed to the Old Calton burial-ground and await its arrival. What is now a level road, Waterloo Place, once looked down on a valley, with a cemetery and the Calton Hill beyond it. In 1815 a bridge was made to span the gulf, while the road was carried (painful necessity) through the cemetery, of which a portion now lies on each side of the road. That to the right side is the larger and more interesting; and it is with it we have to do.

1 "Funeral Sermon," by Dr. Alexander, p. 25. A. and C. Black. Edinburgh.

The gates to-day are strictly guarded, and no one has been admitted. As the procession approaches, the niches in the screen wall—separating on each side the road from the cemeteries—are filled with High School boys, who, on their way home, scramble up to see the marvellous homage to one who had sat in the halls where they meet for lessons, and had played where they play, when he too was a little boy. It seems strange that the meek yet noble face beneath that coffin-lid should be the centre of all this stir. We can only understand it by listening to these words: "Them that honour me, I will honour." Now that they have come close to the gate, the procession is inverted, those in front falling back and lining the road, while the hearse passes up the centre, and the relatives immediately follow. During the short period spent within the walls, the overpowering grief of the mourners passes beyond bounds. But this last putting to sleep does not take long, and he soon lies with his twin-brother and the many dearly-loved ones there before him. "The heavens waited just till they covered him in, and then wept a quick, cold shower, which cleared off, and the new moon lighted up the west." The private mourners left the burial-ground while the remainder of the procession was still passing in. "The grave is the great laboratory, whence alone the incorruptible, glorious, powerful, spiritual product of the Resurrection can emerge. Death is the gate of life. Let us see those we love borne through it without dismay, since they go in the train of Christ, and come forth from the temporary shade in the brightness and splendour of their Divine leader." [1]

Over his resting-place there has been raised, by his uncle, an antique cross, harmonizing with that he had suggested

[1] From unpublished Sermon on 1st Corinthians xv., by the Rev. Dr. Cairns.

for his cousin James Russell. The two stand side by side, alike but different. It is twelve feet in height, and bears the inscription :—

IN MEMORY OF

GEORGE WILSON, M.D.

PROFESSOR OF TECHNOLOGY IN THE UNIVERSITY OF EDINBURGH,

AND

DIRECTOR OF THE INDUSTRIAL MUSEUM OF SCOTLAND.

BORN FEBRUARY 21, 1818.

DIED NOVEMBER 22, 1859.

THEM THAT HONOUR ME I WILL HONOUR.

At its base is the emblem of his "dear Museum," as expressed in more than one printed lecture. "When that Museum shall be erected, I will ask its architect to sculpture on its front an emblematical device, namely, a circle, to imply that the Museum represents the industry of the whole world; within the circle, an equilateral triangle, the respective sides of which shall denote the mineral, vegetable, and animal kingdoms, from which industrial art gathers its materials; within the triangle an open hand, as the symbol of the transforming forces which change those materials; and in the palm of that hand an eye, selecting the materials which shall be transformed." [1]

On the Sunday following the interment, Dr. Alexander

[1] "On the Industrial Museum of Scotland in its Relation to Commercial Enterprise." A Lecture delivered to the Merchant Company of Edinburgh, and printed for private circulation.

delivered a funeral sermon in the Music Hall. This hall was chosen on account of its size, yet many had to leave unable to gain admittance. A sketch of George Wilson's life followed the sermon, with an attempt to account for the homage shown to him in his death by those among whom his life had been spent.[1]

Another friend, Professor MacDougall, has endeavoured to account for the intensity of the mourning as follows:—

"The stroke was felt in a very peculiar manner by the community of Edinburgh, to whom Dr. Wilson was endeared by special ties. He had grown up and attained to distinction among them, had always been looked upon by them as one of themselves, and his rising reputation and influence were regarded by his fellow-citizens with a just pride and satisfaction. He had interested himself actively in whatever tended to their instruction or improvement, yet always in such a way as to disarm the hostility of contending parties, and to place high above suspicion his own spotless integrity, his comprehensive sympathies, and his extraordinary firmness and candour. His voice had been ever ready to instruct or delight his townsmen. His personal character, too, had been felt to be an invaluable power for good among them, and good of the highest kind; for it was scarcely possible to avoid receiving an enhanced impression of the reality and beauty of genuine religion, when it was seen embodied in a living character of such piety and buoyant energy, such lofty aspiration combined with true humility, such generosity, and delicacy, and tenderness, with unbending truth and integrity of principle,—in short, such a general grace and loveliness, united with such masculine determination, activity, and force. It was a community

[1] This Sermon was afterwards published by Messrs. A. and C. Black, Edinburgh.

thus fondly affectioned towards him that were suddenly startled and horrified by the intelligence of his death."

We attempt no estimate of George Wilson's life or character. He himself has narrated the facts, from which each may draw his own conclusions. Where these fail to influence, further words would be of little avail. And so farewell, dear reader : may we meet him in the temple of our God, to go no more out for ever !

APPENDIX.

APPENDIX.

TITLES OF WORKS AND PAPERS PUBLISHED BY PROFESSOR GEORGE WILSON.

WORKS.

Chemistry: an Elementary Text-Book. W. & R. Chambers, Edinburgh. 1850.

The Life and Works of the Honourable Henry Cavendish; including a Critical Inquiry into the relative Claims of all the alleged Discoverers of the Composition of Water. Printed for the Cavendish Society. 1851.

The Life of Dr. John Reid, late Chandos Professor of Medicine in the University of St. Andrews. 1852. Second Edition. Sutherland and Knox, Edinburgh.

The Traveller's Library, No. 26.—Electricity and the Electric Telegraph (Reprinted from the Edinburgh Review). The Chemistry of the Stars (Reprinted from the British Quarterly Review). 1852.

Researches on Colour-Blindness. Sutherland and Knox, Edinburgh. 1855.

The Five Gateways of Knowledge. Macmillan and Co. London. 1857. Second Edition.

PAPERS ON CHEMISTRY AND PHYSICS, CHIEFLY CONTRIBUTED TO TRANSACTIONS OF SCIENTIFIC SOCIETIES.

1839.

Inaugural Dissertation on the Existence of Haloid Salts in Solution. Read before the British Association in 1839; published in Edinburgh Academic Annual for 1840.

1842.

Chemical Analysis of Organic Fluid, in which Sarcina Ventriculi was first detected. Edinburgh Med. and Surg. Journal, No. 151.

1844.

On Isomeric Transmutation. Edinburgh Philosophical Journal.

Account of a Repetition of several of Dr. Samuel Brown's Processes for the Conversion of Carbon into Silicon. By George Wilson, M.D. and John Crombie Brown, Esq. Trans. R.S.E.

1845.

On the Employment of Oxygen as a means of Resuscitation in Asphyxia, and otherwise as a Remedial Agent. Trans. R.S.S.A.

On a simple Mode of constructing Skeleton Models to illustrate the Systems of Crystallography. Trans. R.S.S.A.

On Wollaston's Argument from the Limitation of the Atmosphere, as to the Finite Divisibility of Matter. Trans. R.S.E.

1846.

On the Solubility of Fluoride of Calcium in Water, and its Relation to the occurrence of Fluorine in Minerals, and in Recent and Fossil Plants and Animals. Trans. R.S.E.

On the Applicability of the Electro-Magnetic Bell to the trial of Experiments on the Conduction of Sound, especially of Gases. Trans. R.S.S.A. and Edin. New Phil. Journal.

1847.

On the Decomposition of Water by Platinum and the Black Oxide of Iron at a white Heat; with some Observations on the Theory of Mr. Grove's Experiments. Memoirs of Chemical Society, London.

1848.

On the Specific Gravity of Chloroform, and its Superiority, when pure, as an Anæsthetic. Edin. Monthly Journal of Medical Science.

On some Phenomena of Capillary Attraction observed with Chloroform, Bisulphuret of Carbon, and other Liquids. Journal of Chemical Society, London.

On the Action of Dry Gases on Organic Colouring Matters, and its Relation to the Theory of Bleaching. Trans. R.S.E.

On the Argument for the Binary Theory of Salts from the Non-action of Anhydrous Oxygen Acids on organic Colours. Memoirs of Chemical Society, London.

1849.

On the Early History of the Air-Pump in England. Read to R.S.E.: published in Edin. Phil. Journal.

On the Extraction of Mannite from the Root of Dandelion. Trans. R.S.E.

1850.

On the Crystallization of Carbon and the Possible Derivation of the Diamond from Graphite and Anthracite. Read to R.S.E.: published in Edin. Phil. Journal.

On the Presence of Fluorine in Different Ocean Waters. Read to R.S.E.: published in Edin. Phil. Journal.

On the Presence of Fluorine in Blood and Milk. Read to British Association: published in Edin. Phil. Journal.

1852.

On the Organs in which Lead accumulates in the Horse in Cases of Slow Poisoning by that Metal. Read to R.S.E.: published in Edin. Monthly Medical Journal.

On Two New Processes for the Detection of Fluorine when accompanied by Silica; and on the Presence of Fluorine in Granite, Trap, and other Igneous Rocks, and in the Ashes of Recent and Fossil Plants. Trans. R.S.E.

On a supposed Meteoric Stone, alleged to have fallen in Hampshire in September, 1852. Trans. R.S.E.

1853.

On Nitric Acid as a Source of the Nitrogen found in Plants. Trans. R.S.E.

1855.

On Colour-Blindness in Relation to the Danger attending the Present System of Railway and Marine Coloured Signals. Trans. R.S.S.A. Reprinted as Supplement to Researches on Colour-Blindness.

On the Extent to which the received Theory of Vision requires us to regard the Eye as a Camera Obscura. Trans. R.S.E.

On the Artificial Preparation of Sea-Water for the Aquarium. Read to British Association: published in Edin. New Phil. Journal.

1856.

On the Transmission of the Actinic Rays of Light through the Eye, and their Relation to the Yellow Spot of the Retina. Trans. R.S.E.

1857.

On M. J. Nicklé's Claim to be the Discoverer of Fluorine in the Blood. Read to R.S.E.; published in Edin. New Phil. Jour.

On the Electric Fishes as the Earliest Electric Machine employed by Mankind. Read to Brit. Assoc.: published in Edin. New Phil. Jour.

On the Production of Photographs on Fluorescent Surfaces. Journal of Photographic Society.

1859.

On the Recent Vindication of the Priority of Cavendish as the Discoverer of the Composition of Water. Read to R.S.E.: published in Athenæum.

On Dryness, Darkness, and Coldness, as means of preserving Photographs from fading. Journal of Photographic Society.

On the Fruits of the Cucurbitaceæ and Crescentiaceæ. Trans. Edin. Botanical Society; and Edin. New Phil. Journal.

On some of the Stages which led to the Invention of the Modern Air-Pump. Read to Brit. Assoc. Report of B.A. for 1859. *In brief abstract.*

On the Employment of the Electric Eel, *Gymnotus Electricus*, as a Medical-Shock Machine, by the natives of Surinam. Do. do.

On the Statistics of Colour-Blindness. Do. do.

PUBLISHED LECTURES AND ADDRESSES.

1845.

On the Alleged Antagonism between Poetry and Chemistry. —Torch. Sutherland and Knox.

1849.

On the Sacredness of Medicine as a Profession.

1850.

Introductory Address delivered at the opening of the Medical School, Surgeons' Hall, Edinburgh.

1854.

On the Chemistry of Building Materials. Trans. Architectural Institute, Edinburgh.

Recent Scientific Ballooning. British Quarterly Review.

1855.

What is Technology? Sutherland and Knox.

1856.

On the Physical Sciences which form the Basis of Technology. Sutherland and Knox.

The Objects of Technology and Industrial Museums. Do.

On the Relation of Ornamental to Industrial Art. Edmondston and Douglas, Edinburgh.

On Pharmacy as a Branch of Technology. Pharmaceutical Journal.

On the Relations of Technology to Agriculture. Trans. of Highland Society.

Chemical Final Causes. Edin. University Essays. A. and C. Black.

On the Character of God as inferred from the Study of Human Anatomy. A. and C. Black, Edinburgh.

Addresses as President of Royal Scottish Society of Arts. Trans. R.S.S.A.

1857.

The Industrial Museum of Scotland in its Relation to Commercial Enterprise. Printed for Private Circulation.

1858.

The Progress of the Telegraph, being the Introductory Lecture on Technology for 1858-59. Macmillan and Co.

1859.

The Education of the Pharmaceutical Chemist. Pharmaceutical Journal.

Paper, Pen, and Ink. An Excursus in Technology. Macmillan's Mag.

BIOGRAPHICAL SKETCHES.

1845.

Life and Discoveries of Dalton. British Quarterly Review.

1846.

Sketch of the Life and Works of Wollaston. British Quarterly Review.

1849.

Sketch of the Life and Works of the Hon. Robert Boyle. Do.

A few unpublished Particulars regarding the late Dr. Black. Trans. R.S.E.

1856.

Sketch of James Wilson, Esq. of Woodville. Edin. New Phil. Journal.

MISCELLANEOUS.

The Grievance of the University Tests: A Letter addressed to the Right Hon. Spencer H. Walpole, Secretary of State for the Home Department. Sutherland and Knox. 1852.

Anæsthetics in Surgery, from a Patient's Point of View. Simpson's Obstetric Memoirs, vol. ii.

POEMS IN BLACKWOOD'S MAGAZINE.

To the Stethoscope. March, 1847.
To Professor Edward Forbes. 1855.
The Atlantic Wedding Ring. 1858.

IN MACMILLAN'S MAGAZINE.

The Sleep of the Hyacinth. 1860.

LONDON: R. CLAY, SON, AND TAYLOR, PRINTERS.

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